1.Explain the term machine learning, and how does it work? Explain two machine learning applications in the business world. What are some of the ethical concerns that machine learning applications could raise?

Ans: In simple terms, Machine Learning is about giving the computers the ability (through some algorithms) to find some patterns inside a data so that it can make prediction on some unknown data. It is essentially finding some parameters which defines relationship between the dependent and independent variables in the data and using the same equation to find out the value of dependent variable from given set of independent variables.

Two ML applications:

1. E Commerce Recommendation System – All the E commerce major uses recommendations systems to analysis our shopping patterns and suggest us new products somehow related to our interest.
2. Face recognition system – Social networking companies uses Face Recognition system to find person in the photo uploaded by another person. The person is identified based on pattern from already tagged person and ML system is able to identify the face.

Ethical concerns:

1. There have been several instances of racial and other biases making it into machine learning programs unintentionally. One algorithm identified black people as gorillas, and another altered the facial features of people of color to make them appear more “European” while claiming to beautify them.
2. Another concern is how the data is being used by ML. The Cambridge Analytica scandal with [Facebook](https://www.techopedia.com/definition/4941/facebook), where a political consulting firm used data from the [social networking site](https://www.techopedia.com/definition/4956/social-networking-site-sns) without users’ knowledge or consent, illustrated a lot of the problems associated with the collection and use of user data.

2. Describe the process of human learning:

i. Under the supervision of experts

ii. With the assistance of experts in an indirect manner

iii. Self-education

3. Provide a few examples of various types of machine learning.

A. Supervised Learning-

i. Regression – Housing price prediction

ii. classification – Medical Imaging, email spam filtering

B. Un supervised Learning- Customer Segmentation, Market Basket Analysis,

C. Semi Supervised Learning – Text Classification, Lane finding on GPS data

D. Reinforcement Learning – Optimized marketing, driverless cars

4. Examine the various forms of machine learning.

Ans:

Various forms of machine learning are explain below:

**Supervised Learning :**  
Supervised learning is when the model is getting trained on a labelled dataset. A **labelled** dataset is one that has both input and output parameters. In this type of learning both training and validation, datasets are labelled

**Types of Supervised Learning:**

1. **Classification:**It is a Supervised Learning task where output is having defined labels(discrete value).
2. **Regression:**It is a Supervised Learning task where output is having continuous value.

**Unsupervised Learning :**   
It’s a type of learning where we don’t give a target to our model while training i.e. training model has only input parameter values. The model by itself has to find which way it can learn.

Types of Unsupervised Learning:- 

* **Clustering:**Broadly this technique is applied to group data based on different patterns, our machine model finds data.
* **Association:**This technique is a rule-based ML technique that finds out some very useful relations between parameters of a large data set.

**Semi-supervised Learning:**  
As the name suggests, its working lies between Supervised and Unsupervised techniques. We use these techniques when we are dealing with data that is a little bit labeled and the rest large portion of it is unlabeled. We can use the unsupervised techniques to predict labels and then feed these labels to supervised techniques.

**Reinforcement Learning:**  
In this technique, the model keeps on increasing its performance using Reward Feedback to learn the behavior or pattern. These algorithms are specific to a particular problem e.g. Google Self Driving car, AlphaGo where a bot competes with humans and even itself to getting better and better performers of Go Game. Each time we feed in data, they learn and add the data to its knowledge that is training data. So, the more it learns the better it gets trained and hence experienced.

5. Can you explain what a well-posed learning problem is? Explain the main characteristics that must be present to identify a learning problem properly.

Ans:

A computer program is said to learn from experience E with respect to some class of tasks T and performance measure P, if its performance in tasks T, as measured by P, improves with experience E.

**Features in a Learning Problem**

* The class of tasks (T)
* The measure of performance to be improved (P)
* The source of experience (E)

**Examples of Well Defined Learning Problem**

**Checkers Learning Problem**

* **Task (T):** Playing Checkers
* **Performance Measure (P):** Percent of games won against opponents.
* **Training Experience (E):** Playing practice games against itself.

6. Is machine learning capable of solving all problems? Give a detailed explanation of your answer.

Machine learning, specifically deep learning algorithms, are useful for finding complex relationships and hidden patterns in data consisting of many interdependent variables. For less complicated problems, if the rule-based system is giving performance comparable to a machine learning system, then it is advisable to avoid the use of a machine learning system.

Most deep learning models require labeled data and an expert team to train the models and put them in production. It is advisable not to use deep learning algorithms to deliver projects if you don’t have enough labeled data and a dedicated team. For example, let’s say that you are developing a model that detects illegal listings from the e-commerce company website. The operation team has determined some keywords to help find illegal listings. Due to the mentioned constraints, you might go with a rule-based approach using keywords to detect illegal listings, and later, as the second version of the model, you can implement an image classification system along with some text models to detect illegal listings once required resources are acquired.

7. What are the various methods and technologies for solving machine learning problems? Any two of them should be defined in detail.

Ans:

Following are major methods for machine learning:

* Regression
* Classification
* Clustering
* Dimensionality Reduction
* Ensemble Methods
* Neural Nets and Deep Learning
* Transfer Learning
* Reinforcement Learning
* Natural Language Processing
* Word Embeddings

**Classification**

Classification is a class of supervised ML, classification methods predict or explain a class value. For example, they can help predict whether or not an online customer will buy a product. The output can be yes or no: buyer or not buyer. But classification methods aren’t limited to two classes. For example, a classification method could help to assess whether a given image contains a car or a truck. In this case, the output will be 3 different values: 1) the image contains a car, 2) the image contains a truck, or 3) the image contains neither a car nor a truck.

The simplest classification algorithm is logistic regression — which makes it sounds like a regression method, but it’s not. Logistic regression estimates the probability of an occurrence of an event based on one or more inputs.

**Clustering**

With clustering methods, we get into the category of unsupervised ML because their goal is to group or cluster observations that have similar characteristics. Clustering methods don’t use output information for training, but instead let the algorithm define the output. In clustering methods, we can only use visualizations to inspect the quality of the solution.

The most popular clustering method is K-Means, where “K” represents the number of clusters that the user chooses to create. (Note that there are various techniques for choosing the value of K, such as the elbow method.)

Roughly, what K-Means does with the data points:

Randomly chooses K centers within the data.

Assigns each data point to the closest of the randomly created centers.

Re-computes the center of each cluster.

If centers don’t change (or change very little), the process is finished. Otherwise, we return to step 2. (To prevent ending up in an infinite loop if the centers continue to change, set a maximum number of iterations in advance.)

8. Can you explain the various forms of supervised learning? Explain each one with an example application.

Ans:

[Supervised learning](https://en.wikipedia.org/wiki/Supervised_learning) describes a class of problem that involves using a model to learn a mapping between input examples and the target variable.

There are two main types of supervised learning problems: they are classification that involves predicting a class label and regression that involves predicting a numerical value.

Classification: Supervised learning problem that involves predicting a class label.

Regression: Supervised learning problem that involves predicting a numerical label.

Both classification and regression problems may have one or more input variables and input variables may be any data type, such as numerical or categorical.

An example of a classification problem would be the [MNIST handwritten digits](https://machinelearningmastery.com/how-to-develop-a-convolutional-neural-network-from-scratch-for-mnist-handwritten-digit-classification/) dataset where the inputs are images of handwritten digits (pixel data) and the output is a class label for what digit the image represents (numbers 0 to 9).

An example of a regression problem would be the [Boston house prices](https://machinelearningmastery.com/regression-tutorial-keras-deep-learning-library-python/) dataset where the inputs are variables that describe a neighborhood and the output is a house price in dollars.

9. What is the difference between supervised and unsupervised learning? With a sample application in each region, explain the differences.

|  |  |
| --- | --- |
| **SUPERVISED LEARNING** | **UNSUPERVISED LEARNING** |
| **Input Data** | **Uses Known and Labeled Data as input** | **Uses Unknown Data as input** |
| **Computational Complexity** | **Less Computational Complexity** | **More Computational Complex** |
| **Real Time** | **Uses off-line analysis** | **Uses Real Time Analysis of Data** |
| **Number of Classes** | **Number of Classes are known** | **Number of Classes are not known** |
| **Accuracy of Results** | **Accurate and Reliable Results** | **Moderate Accurate and Reliable Results** |
| **Output data** | **Desired output is given.** | **Desired output is not given.** |
| **Model** | **In supervised learning it is not possible to learn larger and more complex models than with supervised learning** | **In unsupervised learning it is possible to learn larger and more complex models than  with unsupervised learning** |
| **Training data** | **In supervised learning training data is used to infer model** | **In unsupervised learning training data is not used.** |
| **Another name** | **Supervised learning is also called classification.** | **Unsupervised learning is also called clustering.** |
| **Test of model** | **We can test our model.** | **We can not test our model.** |
| **Example** | **Optical Character Recognition** | **Find a face in an image.** |

10. Describe the machine learning process in depth.

Machine learning is the process of making systems that learn and improve by themselves, by being specifically programmed.

The ultimate goal of machine learning is to design algorithms that automatically help a system gather data and use that data to learn more. Systems are expected to look for patterns in the data collected and use them to make vital decisions for themselves.

In general, machine learning is getting systems to think and act like humans, show human-like intelligence, and give them a brain. In the real world, there are existing machine learning models capable of tasks like :

* Separating spam from actual emails, as seen in Gmail
* Correcting grammar and spelling mistakes, as seen in autocorrect

Thanks to machine learning, the world has also seen design systems capable of exhibiting uncanny human-like thinking, which performs tasks like:

* Object and image recognition
* Detecting fake news
* Understanding written or spoken words
* Bots on websites that interact with humans, like humans
* Self-driven cars

Machine Learning Steps

The task of imparting intelligence to machines seems daunting and impossible. But it is actually really easy. It can be broken down into 7 major steps :

1. Collecting Data:

As you know, machines initially learn from the [data](https://www.simplilearn.com/what-is-data-article) that you give them. It is of the utmost importance to collect reliable data so that your machine learning model can find the correct patterns. The quality of the data that you feed to the machine will determine how accurate your model is. If you have incorrect or outdated data, you will have wrong outcomes or predictions which are not relevant.

Make sure you use data from a reliable source, as it will directly affect the outcome of your model. Good data is relevant, contains very few missing and repeated values, and has a good representation of the various subcategories/classes present.

2. Preparing the Data:

After you have your data, you have to prepare it. You can do this by :

* Putting together all the data you have and randomizing it. This helps make sure that data is evenly distributed, and the ordering does not affect the learning process.
* Cleaning the data to remove unwanted data, missing values, rows, and columns, duplicate values, data type conversion, etc. You might even have to restructure the dataset and change the rows and columns or index of rows and columns.
* [Visualize the data](https://www.simplilearn.com/data-visualization-article) to understand how it is structured and understand the relationship between various variables and classes present.
* Splitting the cleaned data into two sets - a training set and a testing set. The training set is the set your model learns from. A testing set is used to check the accuracy of your model after training.

3. Choosing a Model:

A machine learning model determines the output you get after running a machine learning algorithm on the collected data. It is important to choose a model which is relevant to the task at hand. Over the years, scientists and engineers developed various models suited for different tasks like speech recognition, image recognition, prediction, etc. Apart from this, you also have to see if your model is suited for numerical or categorical data and choose accordingly.

4. Training the Model:

Training is the most important step in machine learning. In training, you pass the prepared data to your machine learning model to find patterns and make predictions. It results in the model learning from the data so that it can accomplish the task set. Over time, with training, the model gets better at predicting.

5. Evaluating the Model:

After training your model, you have to check to see how it’s performing. This is done by testing the performance of the model on previously unseen data. The unseen data used is the testing set that you split our data into earlier. If testing was done on the same data which is used for training, you will not get an accurate measure, as the model is already used to the data, and finds the same patterns in it, as it previously did. This will give you disproportionately high accuracy.

When used on testing data, you get an accurate measure of how your model will perform and its speed.

6. Parameter Tuning:

Once you have created and evaluated your model, see if its accuracy can be improved in any way. This is done by tuning the parameters present in your model. Parameters are the variables in the model that the programmer generally decides. At a particular value of your parameter, the accuracy will be the maximum. Parameter tuning refers to finding these values.

7. Making Predictions

In the end, you can use your model on unseen data to make predictions accurately.

a. Make brief notes on any two of the following:

MATLAB is one of the most widely used programming languages.

MATLAB is a unique programming language which is mostly used by scientists and engineers. Hence, aspiring tech professionals wish to understand and learn this programming language to get good job roles easily. Also, since this programming language is generally used by scientists, researchers, or educational institutions, the job roles of this programming language are quite different from others.  
  
MATLAB experts are employed in scientific laboratories, educational institutions, and research centres. These candidates use this programming language to present an enhanced scientific graphical view with appropriate computational mathematics logic in the backend. There are several positions that MATLAB professionals may follow.

Although MATLAB is a high-level programming language, building and running applications is a little different from other programming languages. Therefore, before using MATLAB, engineers and scientists should be familiar with other high-level or object-oriented programming languages such as C, C++, or Java. It is also recommended that they have a good knowledge of mathematical terms such as matrices, arrays, algebra, numbers, polynomials, and differential equations.

ii. Deep learning applications in healthcare

AI and machine learning have gained a lot of popularity and acceptance in recent years. With the onset of the Covid-19 pandemic, the situation changed even more. During the crisis, we witnessed a rapid [digital transformation](https://www.analyticsinsight.net/benefits-of-digital-transformation-and-its-goals-for-2021/) and the adoption of disruptive technology across different industries. Healthcare was one of the potential sectors that gained many benefits from deploying disruptive technologies. AI, machine learning, and [deep learning](https://www.analyticsinsight.net/top-three-extraordinary-applications-of-deep-learning-for-computer-vision/) have become an imperative part of the sector. Deep learning in healthcare has a huge impact and it has enabled the sector to improve patient monitoring and diagnostics. Here are the top pathbreaking applications of deep learning in healthcare.

#### ****Drug Discovery****

The role of deep learning in identifying drug combinations is significant. During the pandemic, vaccine and [drug development](https://www.analyticsinsight.net/easing-the-lives-of-mental-health-patients-via-artificial-intelligence/) were funded by disruptive technologies like AI, machine learning, and deep learning. Since drug discovery is a complex task, deep learning can make it faster, cost-effective, and easier. Deep learning algorithms can predict the drug properties, drug-target interaction prediction, and in generating a compound with desired properties. Deep learning algorithms can easily process genomic, clinical, and population data and various toolkits can be used to detect patterns between the data. By leveraging machine learning and deep learning, researchers are now able to perform faster molecular modeling and predictive analytics in defining protein structures.

#### ****Medical Imaging and Diagnostics****

[Deep learning models](https://www.analyticsinsight.net/top-10-deep-learning-models-for-beginners/) can interpret medical images like X-ray, MRI scan, CT scan, etc., to perform diagnosis. The algorithms can detect any risk and flag anomalies in the medical images. Deep learning is extensively used in detecting cancer. The recent innovation of computer vision was enabled by machine learning and deep learning. With a faster diagnosis through medical imaging, it becomes easier to treat diseases.

#### ****Simplifying Clinical Trials****

Clinical trials are complicated and expensive. [Machine learning](https://www.analyticsinsight.net/top-mlops-based-tools-for-enabling-effective-machine-learning-lifecycle/) and deep learning can be leveraged to perform predictive analytics to identify potential candidates for clinical trials and enable scientists to pool in people from different data points and sources. Deep learning will also enable continuous monitoring of these trials with minimum errors and human intervention.

#### ****Personalized Treatment****

With deep learning models, it becomes easier to analyze patient’s health data, medical history, vital symptoms, medical test results, and others. Hence, this enables healthcare providers to understand each patient and provide personalized treatment for them. These disruptive technologies enable the detection of suitable and multiple treatment options for different patients. With real-time data collection through connected devices, machine learning models can use deep neural networks to predict upcoming health conditions or risks and provide specific medicines or treatments.

#### ****Improved Health Records and Patient Monitoring****

Deep learning and machine learning models can process and analyze various medical and healthcare data, both structured and unstructured. Document classification and maintaining [up-to-date health records](https://www.analyticsinsight.net/decoding-the-booming-adoption-of-ai-in-healthcare-market/) might become manually difficult. Thus, machine learning and its subset deep learning can be used to maintain smart health records. With the advent of telemedicine, wearables, and remote patient monitoring, there is now abundant real-time data on health and deep learning can help in intelligently monitoring the patients and predict risks.

#### ****Health Insurance and Fraud Detection****

Deep learning can efficiently identify insurance frauds and predict future risks. Health insurance providers are also an advantage if they use deep learning because the models can predict the future trends and behavior to suggest smart insurance policies to their clients.

iii. Study of the market basket

Machine learning algorithms have made market basket analysis more accessible than ever, allowing retailers to extract valuable insights from large datasets in real time.

In this example, we'll see how neural networks are a powerful tool that can be used to discover latent patterns in transactional data and generate meaningful rules that allow us to create practical applications of market basket analysis in the retail industry.

## Application type

In this application type, the number of outputs is the same as the number of inputs. Therefore, this is an [auto association](https://www.neuraldesigner.com/learning/tutorials/neural-networks-applications#AutoAssociation) problem.

Auto association, specifically in the context of market basket analysis, refers to a technique used to identify patterns in customer purchase behavior by analyzing the co-occurrence of items in transactions.

The idea behind auto association is to build a model from the associations between different items that tend to be purchased together, then use this knowledge to make recommendations or optimize product placement in a store. This is the primary goal of this example.

## Data set

The first step is to prepare the [data set](https://www.neuraldesigner.com/learning/tutorials/data-set), which is the source of information for this auto associaton problem. It is composed of:

* [Data source](https://www.neuraldesigner.com/blog/market-basket-analysis-using-R-Neural-Designer#DataSource).
* [Statistics](https://www.neuraldesigner.com/blog/market-basket-analysis-using-R-Neural-Designer#Statistics).

### Data source

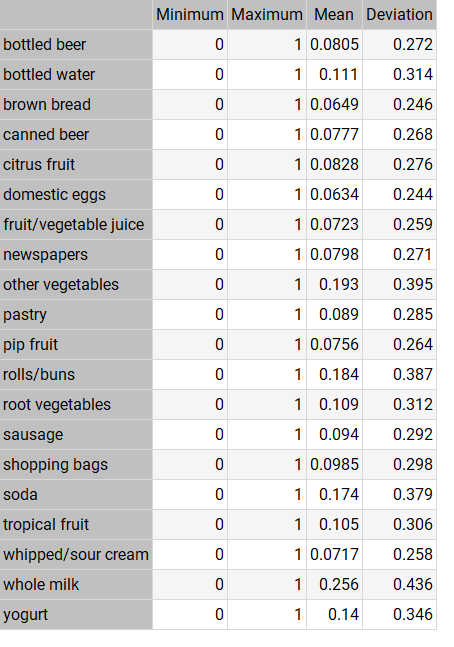
The dataset selected for our example consists of 9835 grocery store transactions. Each transaction can be a single product or several products.

The file [Shopping\_Cart.csv](https://www.neuraldesigner.com/files/datasets/Shopping_Cart.csv) contains the data set after being submitted for processing.

### Statistics

When data has already been processed, it is time to add it to Neural Designer to make our recommendation system. Neural Designer provides an easy way of analyzing and deploying advanced analytics models.

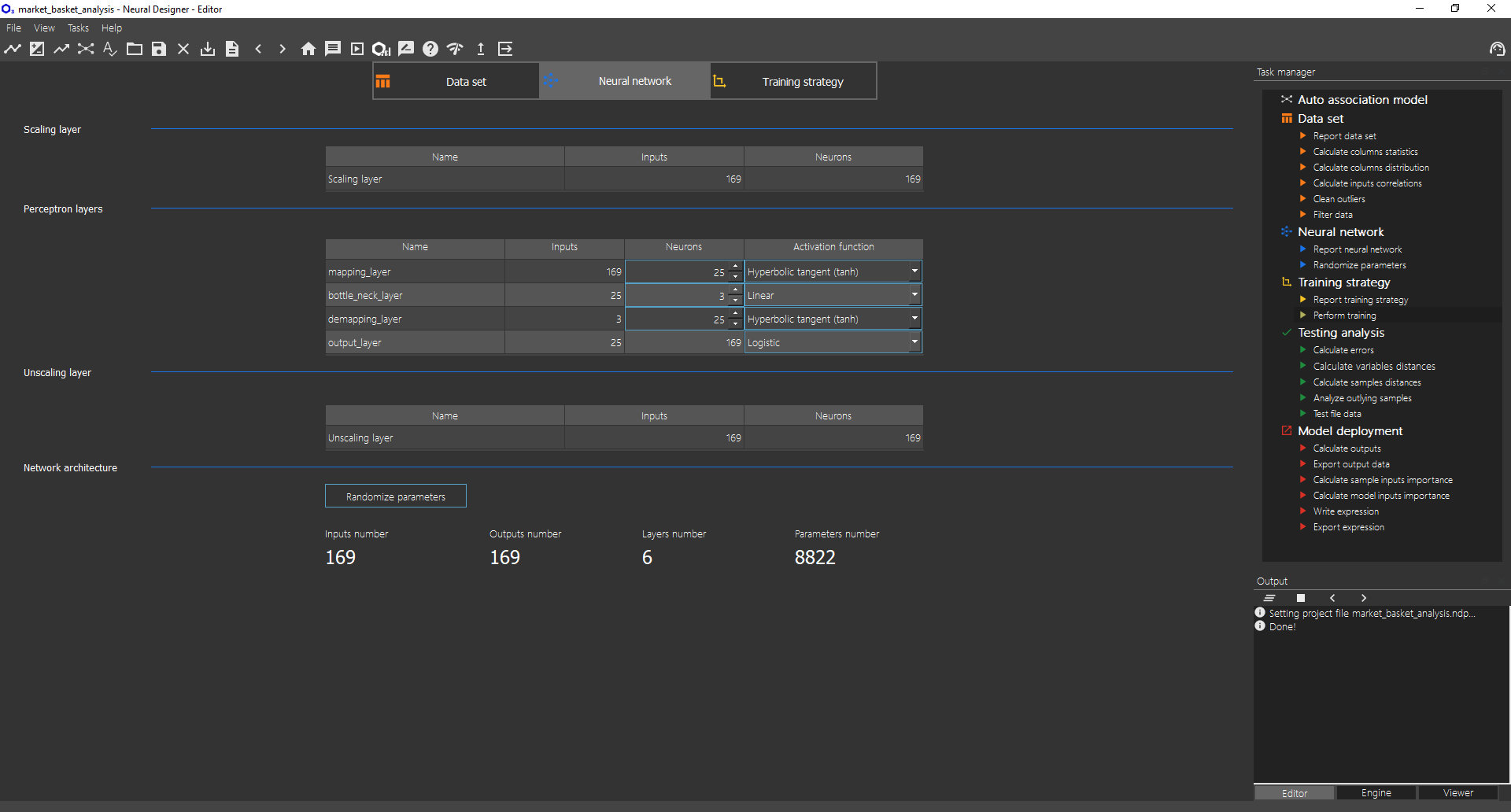
We can check the basic statistics of each variable, which give us valuable information when designing a model and also give important insights into our application. The table below shows the minimums, maximums, means, and standard deviations of the 20 most frequent variables in this data set.



## Neural network

We use neural networks to develop our recommendation system, the machine learning technique that Neural Designer implements. The neural network defines the predictive model as a multidimensional function containing adjustable parameters. The first step to creating our recommendation system is choosing a neural network architecture representing the classification function.

The neural network of this problem is very complex (169 inputs, 25 hidden neurons, and 169 outputs). The following image represents the Neural Desginer interface where the number of neuron in the perceptron layers can be chosen.



The next step is to train the neural network mentioned above. For this purpose, we apply the [Adaptive Moment Estimation method](https://www.neuraldesigner.com/learning/tutorials/training-strategy#AdaptativeLinearMomentum) to obtain a good model to recommend a shopping basket more suitable for the customer.

The resulting training error using the adaptive moment estimation method is 0.674. Our model is now ready to be deployed and recommend products to customers according to their purchases.

## Model deployment

Once our neural network is trained and ready to use, we can export the mathematical expression from Neural Designer:

scaled\_abrasive\_cleaner = abrasive\_cleaner;

scaled\_arti\_f\_\_sweetener = arti\_f\_\_sweetener;

scaled\_baby\_cosmetics = baby\_cosmetics;

scaled\_baby\_food = baby\_food;

scaled\_bags = bags;

scaled\_baking\_powder = baking\_powder;

scaled\_bathroom\_cleaner = bathroom\_cleaner;

scaled\_beef = beef;

scaled\_berries = berries;

scaled\_beverages = beverages;

scaled\_bottled\_beer = bottled\_beer;

scaled\_bottled\_water = bottled\_water;

scaled\_brandy = brandy;

scaled\_brown\_bread = brown\_bread;

scaled\_butter = butter;

scaled\_butter\_milk = butter\_milk;

scaled\_cake\_bar = cake\_bar;

scaled\_candles = candles;

scaled\_candy = candy;

scaled\_canned\_beer = canned\_beer;

scaled\_canned\_fish = canned\_fish;

scaled\_canned\_fruit = canned\_fruit;

scaled\_canned\_vegetables = canned\_vegetables;

scaled\_cat\_food = cat\_food;

scaled\_cereals = cereals;

scaled\_chewing\_gum = chewing\_gum;

scaled\_chicken = chicken;

scaled\_chocolate = chocolate;

scaled\_chocolate\_marshmallow = chocolate\_marshmallow;

scaled\_citrus\_fruit = citrus\_fruit;

scaled\_cleaner = cleaner;

scaled\_cling\_film\_div\_bags = cling\_film\_div\_bags;

scaled\_cocoa\_drinks = cocoa\_drinks;

scaled\_coffee = coffee;

scaled\_condensed\_milk = condensed\_milk;

scaled\_cooking\_chocolate = cooking\_chocolate;

scaled\_cookware = cookware;

scaled\_cream = cream;

scaled\_cream\_cheese = cream\_cheese;

scaled\_curd = curd;

scaled\_curd\_cheese = curd\_cheese;

scaled\_decalci\_fier = decalci\_fier;

scaled\_dental\_care = dental\_care;

scaled\_dessert = dessert;

scaled\_detergent = detergent;

scaled\_dish\_cleaner = dish\_cleaner;

scaled\_dishes = dishes;

scaled\_dog\_food = dog\_food;

scaled\_domestic\_eggs = domestic\_eggs;

scaled\_female\_sanitary\_products = female\_sanitary\_products;

scaled\_finished\_products = finished\_products;

scaled\_fish = fish;

scaled\_flour = flour;

scaled\_flower\_\_seeds\_ = flower\_\_seeds\_;

scaled\_flower\_soil\_div\_fertilizer = flower\_soil\_div\_fertilizer;

scaled\_frankfurter = frankfurter;

scaled\_frozen\_chicken = frozen\_chicken;

scaled\_frozen\_dessert = frozen\_dessert;

scaled\_frozen\_fish = frozen\_fish;

scaled\_frozen\_fruits = frozen\_fruits;

scaled\_frozen\_meals = frozen\_meals;

scaled\_frozen\_potato\_products = frozen\_potato\_products;

scaled\_frozen\_vegetables = frozen\_vegetables;

scaled\_fruit\_div\_vegetable\_juice = fruit\_div\_vegetable\_juice;

scaled\_grapes = grapes;

scaled\_hair\_spray = hair\_spray;

scaled\_ham = ham;

scaled\_hamburger\_meat = hamburger\_meat;

scaled\_hard\_cheese = hard\_cheese;

scaled\_herbs = herbs;

scaled\_honey = honey;

scaled\_house\_keeping\_products = house\_keeping\_products;

scaled\_hygiene\_articles = hygiene\_articles;

scaled\_ice\_cream = ice\_cream;

scaled\_instant\_coffee = instant\_coffee;

scaled\_Instant\_food\_products = Instant\_food\_products;

scaled\_jam = jam;

scaled\_ketchup = ketchup;

scaled\_kitchen\_towels = kitchen\_towels;

scaled\_kitchen\_utensil = kitchen\_utensil;

scaled\_light\_bulbs = light\_bulbs;

scaled\_liqueur = liqueur;

scaled\_liquor = liquor;

scaled\_liquor\_\_appetizer\_ = liquor\_\_appetizer\_;

scaled\_liver\_loaf = liver\_loaf;

scaled\_long\_li\_fe\_bakery\_product = long\_li\_fe\_bakery\_product;

scaled\_make\_up\_remover = make\_up\_remover;

scaled\_male\_cosmetics = male\_cosmetics;

scaled\_margarine = margarine;

scaled\_mayonnaise = mayonnaise;

scaled\_meat = meat;

scaled\_meat\_spreads = meat\_spreads;

scaled\_misc\_\_beverages = misc\_\_beverages;

scaled\_mustard = mustard;

scaled\_napkins = napkins;

scaled\_ne\_wspapers = ne\_wspapers;

scaled\_nut\_snack = nut\_snack;

scaled\_nuts\_div\_prunes = nuts\_div\_prunes;

scaled\_oil = oil;

scaled\_onions = onions;

scaled\_organic\_products = organic\_products;

scaled\_organic\_sausage = organic\_sausage;

scaled\_other\_vegetables = other\_vegetables;

scaled\_packaged\_fruit\_div\_vegetables = packaged\_fruit\_div\_vegetables;

scaled\_pasta = pasta;

scaled\_pastr\_y = pastr\_y;

scaled\_pet\_care = pet\_care;

scaled\_photo\_div\_film = photo\_div\_film;

scaled\_pickled\_vegetables = pickled\_vegetables;

scaled\_pip\_fruit = pip\_fruit;

scaled\_popcorn = popcorn;

scaled\_pork = pork;

scaled\_pot\_plants = pot\_plants;

scaled\_potato\_products = potato\_products;

scaled\_preservation\_products = preservation\_products;

scaled\_processed\_cheese = processed\_cheese;

scaled\_prosecco = prosecco;

scaled\_pudding\_powder = pudding\_powder;

scaled\_ready\_soups = ready\_soups;

scaled\_red\_div\_blush\_wine = red\_div\_blush\_wine;

scaled\_rice = rice;

scaled\_roll\_products = roll\_products;

scaled\_rolls\_div\_buns = rolls\_div\_buns;

scaled\_root\_vegetables = root\_vegetables;

scaled\_rubbing\_alcohol = rubbing\_alcohol;

scaled\_rum = rum;

scaled\_salad\_dressing = salad\_dressing;

scaled\_salt = salt;

scaled\_salty\_snack = salty\_snack;

scaled\_sauces = sauces;

scaled\_sausage = sausage;

scaled\_seasonal\_products = seasonal\_products;

scaled\_semi\_res\_finished\_bread = semi\_res\_finished\_bread;

scaled\_shopping\_bags = shopping\_bags;

scaled\_skin\_care = skin\_care;

scaled\_sliced\_cheese = sliced\_cheese;

scaled\_snack\_products = snack\_products;

scaled\_soap = soap;

scaled\_soda = soda;

scaled\_soft\_cheese = soft\_cheese;

scaled\_softener = softener;

scaled\_sound\_storage\_medium = sound\_storage\_medium;

scaled\_soups = soups;

scaled\_sparkling\_wine = sparkling\_wine;

scaled\_specialty\_bar = specialty\_bar;

scaled\_specialty\_cheese = specialty\_cheese;

scaled\_specialty\_chocolate = specialty\_chocolate;

scaled\_specialty\_fat = specialty\_fat;

scaled\_specialty\_vegetables = specialty\_vegetables;

scaled\_spices = spices;

scaled\_spread\_cheese = spread\_cheese;

scaled\_sugar = sugar;

scaled\_sweet\_spreads = sweet\_spreads;

scaled\_syrup = syrup;

scaled\_tea = tea;

scaled\_tidbits = tidbits;

scaled\_toilet\_cleaner = toilet\_cleaner;

scaled\_tropical\_fruit = tropical\_fruit;

scaled\_turkey = turkey;

scaled\_UHT\_res\_milk = UHT\_res\_milk;

scaled\_vinegar = vinegar;

scaled\_waffles = waffles;

scaled\_whipped\_div\_sour\_cream = whipped\_div\_sour\_cream;

scaled\_whisky = whisky;

scaled\_white\_bread = white\_bread;

scaled\_white\_wine = white\_wine;

scaled\_whole\_milk = whole\_milk;

scaled\_yogurt = yogurt;

scaled\_zwieback = zwieback;

mapping\_layer\_output\_0 = tanh( -0.29236 + (scaled\_abrasive\_cleaner\*0.488515) + (scaled\_arti\_f\_\_sweetener\*1.56887) + (scaled\_baby\_cosmetics\*1.31552) + (scaled\_baby\_food\*-0.329942) + (scaled\_bags\*-0.231239) + (scaled\_baking\_powder\*0.0478544) + (scaled\_bathroom\_cleaner\*-0.211671) + (scaled\_beef\*-0.181058) + (scaled\_berries\*-0.236836) + (scaled\_beverages\*0.052005) + (scaled\_bottled\_beer\*-0.413498) + (scaled\_bottled\_water\*0.311406) + (scaled\_brandy\*-0.344115) + (scaled\_brown\_bread\*-0.00407194) + (scaled\_butter\*-0.122242) + (scaled\_butter\_milk\*-0.369494) + (scaled\_cake\_bar\*0.923545) + (scaled\_candles\*0.32175) + (scaled\_candy\*-0.110415) + (scaled\_canned\_beer\*0.0881693) + (scaled\_canned\_fish\*-0.156318) + (scaled\_canned\_fruit\*0.480704) + (scaled\_canned\_vegetables\*-0.0943391) + (scaled\_cat\_food\*-0.11276) + (scaled\_cereals\*0.0496678) + (scaled\_chewing\_gum\*-0.0404876) + (scaled\_chicken\*0.310777) + (scaled\_chocolate\*0.200103) + (scaled\_chocolate\_marshmallow\*-0.236131) + (scaled\_citrus\_fruit\*0.0587306) + (scaled\_cleaner\*0.6805) + (scaled\_cling\_film\_div\_bags\*-0.406425) + (scaled\_cocoa\_drinks\*-0.0486411) + (scaled\_coffee\*-0.0465164) + (scaled\_condensed\_milk\*0.164086) + (scaled\_cooking\_chocolate\*0.00777089) + (scaled\_cookware\*-0.122617) + (scaled\_cream\*0.143584) + (scaled\_cream\_cheese\*-0.0914208) + (scaled\_curd\*0.164977) + (scaled\_curd\_cheese\*-0.242864) + (scaled\_decalci\_fier\*1.7157) + (scaled\_dental\_care\*0.289562) + (scaled\_dessert\*0.0525238) + (scaled\_detergent\*0.151426) + (scaled\_dish\_cleaner\*-0.142802) + (scaled\_dishes\*-0.0897549) + (scaled\_dog\_food\*0.455158) + (scaled\_domestic\_eggs\*0.0457843) + (scaled\_female\_sanitary\_products\*0.401145) + (scaled\_finished\_products\*0.469543) + (scaled\_fish\*0.370326) + (scaled\_flour\*0.217652) + (scaled\_flower\_\_seeds\_\*-0.267298) + (scaled\_flower\_soil\_div\_fertilizer\*0.144761) + (scaled\_frankfurter\*0.253808) + (scaled\_frozen\_chicken\*0.207715) + (scaled\_frozen\_dessert\*0.170832) + (scaled\_frozen\_fish\*-0.313099) + (scaled\_frozen\_fruits\*0.0468455) + (scaled\_frozen\_meals\*0.0908775) + (scaled\_frozen\_potato\_products\*-0.190387) + (scaled\_frozen\_vegetables\*0.00348885) + (scaled\_fruit\_div\_vegetable\_juice\*0.136097) + (scaled\_grapes\*-0.201966) + (scaled\_hair\_spray\*-0.179742) + (scaled\_ham\*0.187168) + (scaled\_hamburger\_meat\*-0.0940484) + (scaled\_hard\_cheese\*0.168166) + (scaled\_herbs\*0.393518) + (scaled\_honey\*-0.204175) + (scaled\_house\_keeping\_products\*0.358166) + (scaled\_hygiene\_articles\*0.151567) + (scaled\_ice\_cream\*0.491307) + (scaled\_instant\_coffee\*0.164123) + (scaled\_Instant\_food\_products\*0.0576147) + (scaled\_jam\*0.117062) + (scaled\_ketchup\*-0.2999) + (scaled\_kitchen\_towels\*-0.529365) + (scaled\_kitchen\_utensil\*-0.199052) + (scaled\_light\_bulbs\*0.581079) + (scaled\_liqueur\*-0.322235) + (scaled\_liquor\*0.954282) + (scaled\_liquor\_\_appetizer\_\*0.661325) + (scaled\_liver\_loaf\*0.51873) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0322738) + (scaled\_make\_up\_remover\*0.17797) + (scaled\_male\_cosmetics\*-0.211463) + (scaled\_margarine\*0.134144) + (scaled\_mayonnaise\*-0.487956) + (scaled\_meat\*0.174968) + (scaled\_meat\_spreads\*-0.0269371) + (scaled\_misc\_\_beverages\*-0.114254) + (scaled\_mustard\*0.336846) + (scaled\_napkins\*0.178171) + (scaled\_ne\_wspapers\*-0.212555) + (scaled\_nut\_snack\*0.421568) + (scaled\_nuts\_div\_prunes\*0.328492) + (scaled\_oil\*0.0438679) + (scaled\_onions\*-0.0116076) + (scaled\_organic\_products\*-0.207155) + (scaled\_organic\_sausage\*0.238823) + (scaled\_other\_vegetables\*-2.1409) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.0493028) + (scaled\_pasta\*-0.0141342) + (scaled\_pastr\_y\*0.327395) + (scaled\_pet\_care\*0.0272272) + (scaled\_photo\_div\_film\*0.0492186) + (scaled\_pickled\_vegetables\*-0.294135) + (scaled\_pip\_fruit\*-0.165443) + (scaled\_popcorn\*0.122171) + (scaled\_pork\*0.0152192) + (scaled\_pot\_plants\*-0.0718418) + (scaled\_potato\_products\*-0.445529) + (scaled\_preservation\_products\*1.34952) + (scaled\_processed\_cheese\*-0.406228) + (scaled\_prosecco\*-0.31356) + (scaled\_pudding\_powder\*-0.191742) + (scaled\_ready\_soups\*-0.16748) + (scaled\_red\_div\_blush\_wine\*0.230037) + (scaled\_rice\*0.103126) + (scaled\_roll\_products\*0.554591) + (scaled\_rolls\_div\_buns\*0.447405) + (scaled\_root\_vegetables\*0.228746) + (scaled\_rubbing\_alcohol\*0.350063) + (scaled\_rum\*0.394167) + (scaled\_salad\_dressing\*-0.510245) + (scaled\_salt\*0.147438) + (scaled\_salty\_snack\*0.0376109) + (scaled\_sauces\*-0.252988) + (scaled\_sausage\*-0.0131103) + (scaled\_seasonal\_products\*0.283666) + (scaled\_semi\_res\_finished\_bread\*-0.0928978) + (scaled\_shopping\_bags\*-0.460314) + (scaled\_skin\_care\*0.169148) + (scaled\_sliced\_cheese\*-0.262138) + (scaled\_snack\_products\*-0.428775) + (scaled\_soap\*0.464005) + (scaled\_soda\*0.368934) + (scaled\_soft\_cheese\*-0.111804) + (scaled\_softener\*0.395579) + (scaled\_sound\_storage\_medium\*0.553391) + (scaled\_soups\*-0.252676) + (scaled\_sparkling\_wine\*-0.627774) + (scaled\_specialty\_bar\*-0.0526035) + (scaled\_specialty\_cheese\*-0.542392) + (scaled\_specialty\_chocolate\*0.44415) + (scaled\_specialty\_fat\*0.142585) + (scaled\_specialty\_vegetables\*-0.311401) + (scaled\_spices\*-0.535428) + (scaled\_spread\_cheese\*0.520603) + (scaled\_sugar\*0.0681767) + (scaled\_sweet\_spreads\*-0.0845773) + (scaled\_syrup\*0.0282206) + (scaled\_tea\*-0.199167) + (scaled\_tidbits\*-0.318673) + (scaled\_toilet\_cleaner\*-0.0270594) + (scaled\_tropical\_fruit\*-0.0954752) + (scaled\_turkey\*0.0917858) + (scaled\_UHT\_res\_milk\*-0.340719) + (scaled\_vinegar\*-0.0866964) + (scaled\_waffles\*-0.144182) + (scaled\_whipped\_div\_sour\_cream\*0.127089) + (scaled\_whisky\*0.3543) + (scaled\_white\_bread\*0.0540266) + (scaled\_white\_wine\*-0.569884) + (scaled\_whole\_milk\*0.287965) + (scaled\_yogurt\*-1.21725) + (scaled\_zwieback\*-0.116848) );

mapping\_layer\_output\_1 = tanh( -0.421953 + (scaled\_abrasive\_cleaner\*0.0575243) + (scaled\_arti\_f\_\_sweetener\*0.0407807) + (scaled\_baby\_cosmetics\*0.771091) + (scaled\_baby\_food\*0.80895) + (scaled\_bags\*0.261914) + (scaled\_baking\_powder\*0.0396717) + (scaled\_bathroom\_cleaner\*-0.409037) + (scaled\_beef\*0.240417) + (scaled\_berries\*-0.0311396) + (scaled\_beverages\*0.0858145) + (scaled\_bottled\_beer\*0.0821367) + (scaled\_bottled\_water\*0.0893104) + (scaled\_brandy\*-0.18328) + (scaled\_brown\_bread\*-0.0498388) + (scaled\_butter\*0.187149) + (scaled\_butter\_milk\*-0.0307382) + (scaled\_cake\_bar\*0.211905) + (scaled\_candles\*-0.0463159) + (scaled\_candy\*0.0754407) + (scaled\_canned\_beer\*0.279164) + (scaled\_canned\_fish\*-0.104307) + (scaled\_canned\_fruit\*-0.0825556) + (scaled\_canned\_vegetables\*-0.219812) + (scaled\_cat\_food\*0.027848) + (scaled\_cereals\*-1.03167) + (scaled\_chewing\_gum\*0.0321058) + (scaled\_chicken\*-0.00135786) + (scaled\_chocolate\*-0.0625584) + (scaled\_chocolate\_marshmallow\*-0.404655) + (scaled\_citrus\_fruit\*-0.0881776) + (scaled\_cleaner\*0.144491) + (scaled\_cling\_film\_div\_bags\*-0.681314) + (scaled\_cocoa\_drinks\*-0.633238) + (scaled\_coffee\*0.00900816) + (scaled\_condensed\_milk\*-0.436475) + (scaled\_cooking\_chocolate\*0.398356) + (scaled\_cookware\*-0.515152) + (scaled\_cream\*-0.0582914) + (scaled\_cream\_cheese\*0.0943198) + (scaled\_curd\*0.0232183) + (scaled\_curd\_cheese\*0.0956957) + (scaled\_decalci\_fier\*1.00482) + (scaled\_dental\_care\*-0.154496) + (scaled\_dessert\*-0.154421) + (scaled\_detergent\*0.086886) + (scaled\_dish\_cleaner\*-0.228725) + (scaled\_dishes\*-0.11847) + (scaled\_dog\_food\*-0.0186292) + (scaled\_domestic\_eggs\*0.180018) + (scaled\_female\_sanitary\_products\*0.0916908) + (scaled\_finished\_products\*-0.156342) + (scaled\_fish\*0.0506055) + (scaled\_flour\*-0.389058) + (scaled\_flower\_\_seeds\_\*-0.176348) + (scaled\_flower\_soil\_div\_fertilizer\*-0.82107) + (scaled\_frankfurter\*-0.0149245) + (scaled\_frozen\_chicken\*0.0158769) + (scaled\_frozen\_dessert\*0.0995813) + (scaled\_frozen\_fish\*0.305706) + (scaled\_frozen\_fruits\*1.0146) + (scaled\_frozen\_meals\*0.0754365) + (scaled\_frozen\_potato\_products\*-0.505569) + (scaled\_frozen\_vegetables\*-0.123367) + (scaled\_fruit\_div\_vegetable\_juice\*0.00806116) + (scaled\_grapes\*0.00186183) + (scaled\_hair\_spray\*-0.187471) + (scaled\_ham\*-0.146498) + (scaled\_hamburger\_meat\*0.206416) + (scaled\_hard\_cheese\*0.0847694) + (scaled\_herbs\*-0.00409436) + (scaled\_honey\*0.881754) + (scaled\_house\_keeping\_products\*-0.27763) + (scaled\_hygiene\_articles\*0.107982) + (scaled\_ice\_cream\*-0.223696) + (scaled\_instant\_coffee\*-0.496206) + (scaled\_Instant\_food\_products\*0.0667145) + (scaled\_jam\*-0.361156) + (scaled\_ketchup\*-0.0203399) + (scaled\_kitchen\_towels\*0.0744929) + (scaled\_kitchen\_utensil\*0.312223) + (scaled\_light\_bulbs\*-0.373418) + (scaled\_liqueur\*0.764666) + (scaled\_liquor\*0.523875) + (scaled\_liquor\_\_appetizer\_\*0.343486) + (scaled\_liver\_loaf\*0.334761) + (scaled\_long\_li\_fe\_bakery\_product\*0.17595) + (scaled\_make\_up\_remover\*0.748411) + (scaled\_male\_cosmetics\*-0.448115) + (scaled\_margarine\*0.341074) + (scaled\_mayonnaise\*-0.146383) + (scaled\_meat\*0.0564074) + (scaled\_meat\_spreads\*-0.200904) + (scaled\_misc\_\_beverages\*0.0319972) + (scaled\_mustard\*-0.274485) + (scaled\_napkins\*0.278945) + (scaled\_ne\_wspapers\*-0.187856) + (scaled\_nut\_snack\*-1.02573) + (scaled\_nuts\_div\_prunes\*0.0241189) + (scaled\_oil\*0.0256529) + (scaled\_onions\*0.026877) + (scaled\_organic\_products\*0.0899311) + (scaled\_organic\_sausage\*0.685559) + (scaled\_other\_vegetables\*0.0583071) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.271343) + (scaled\_pasta\*0.0607029) + (scaled\_pastr\_y\*0.0957241) + (scaled\_pet\_care\*-0.460892) + (scaled\_photo\_div\_film\*-0.0731801) + (scaled\_pickled\_vegetables\*-0.00539051) + (scaled\_pip\_fruit\*0.134109) + (scaled\_popcorn\*0.409378) + (scaled\_pork\*-0.0449445) + (scaled\_pot\_plants\*-0.0375613) + (scaled\_potato\_products\*-0.0789927) + (scaled\_preservation\_products\*0.464289) + (scaled\_processed\_cheese\*0.162499) + (scaled\_prosecco\*-0.0586224) + (scaled\_pudding\_powder\*0.399246) + (scaled\_ready\_soups\*-0.124659) + (scaled\_red\_div\_blush\_wine\*-0.23219) + (scaled\_rice\*-0.0822217) + (scaled\_roll\_products\*0.443974) + (scaled\_rolls\_div\_buns\*0.527097) + (scaled\_root\_vegetables\*-0.668102) + (scaled\_rubbing\_alcohol\*-0.177774) + (scaled\_rum\*-0.16024) + (scaled\_salad\_dressing\*-0.583944) + (scaled\_salt\*-0.0122518) + (scaled\_salty\_snack\*-0.0600093) + (scaled\_sauces\*0.204766) + (scaled\_sausage\*-0.0699204) + (scaled\_seasonal\_products\*0.232925) + (scaled\_semi\_res\_finished\_bread\*-0.109049) + (scaled\_shopping\_bags\*-0.0607716) + (scaled\_skin\_care\*0.254203) + (scaled\_sliced\_cheese\*0.0696) + (scaled\_snack\_products\*1.204) + (scaled\_soap\*-0.0311407) + (scaled\_soda\*-0.196619) + (scaled\_soft\_cheese\*-0.0168445) + (scaled\_softener\*-0.366539) + (scaled\_sound\_storage\_medium\*-0.683611) + (scaled\_soups\*0.0578732) + (scaled\_sparkling\_wine\*-0.220698) + (scaled\_specialty\_bar\*-0.387845) + (scaled\_specialty\_cheese\*0.0625071) + (scaled\_specialty\_chocolate\*0.111418) + (scaled\_specialty\_fat\*-0.273785) + (scaled\_specialty\_vegetables\*0.0792467) + (scaled\_spices\*0.926852) + (scaled\_spread\_cheese\*0.169552) + (scaled\_sugar\*0.243585) + (scaled\_sweet\_spreads\*-0.158225) + (scaled\_syrup\*-0.844222) + (scaled\_tea\*-0.410135) + (scaled\_tidbits\*-0.423516) + (scaled\_toilet\_cleaner\*-0.117364) + (scaled\_tropical\_fruit\*0.178739) + (scaled\_turkey\*-0.148347) + (scaled\_UHT\_res\_milk\*0.00522495) + (scaled\_vinegar\*-0.376397) + (scaled\_waffles\*-0.0964423) + (scaled\_whipped\_div\_sour\_cream\*0.137983) + (scaled\_whisky\*-0.273418) + (scaled\_white\_bread\*0.0640395) + (scaled\_white\_wine\*-0.200011) + (scaled\_whole\_milk\*1.19627) + (scaled\_yogurt\*-1.53055) + (scaled\_zwieback\*-0.00917917) );

mapping\_layer\_output\_2 = tanh( 0.158147 + (scaled\_abrasive\_cleaner\*-0.176697) + (scaled\_arti\_f\_\_sweetener\*0.282628) + (scaled\_baby\_cosmetics\*-0.403161) + (scaled\_baby\_food\*-1.03454) + (scaled\_bags\*-0.0123374) + (scaled\_baking\_powder\*0.334761) + (scaled\_bathroom\_cleaner\*0.83257) + (scaled\_beef\*-0.051517) + (scaled\_berries\*-0.0740387) + (scaled\_beverages\*0.0782321) + (scaled\_bottled\_beer\*0.0267813) + (scaled\_bottled\_water\*-0.0713314) + (scaled\_brandy\*-0.0762412) + (scaled\_brown\_bread\*0.190956) + (scaled\_butter\*-0.21297) + (scaled\_butter\_milk\*-0.168643) + (scaled\_cake\_bar\*0.29845) + (scaled\_candles\*-0.392227) + (scaled\_candy\*0.294637) + (scaled\_canned\_beer\*-0.274893) + (scaled\_canned\_fish\*0.0158283) + (scaled\_canned\_fruit\*-0.273398) + (scaled\_canned\_vegetables\*0.43099) + (scaled\_cat\_food\*0.045114) + (scaled\_cereals\*0.183164) + (scaled\_chewing\_gum\*-0.145605) + (scaled\_chicken\*-0.241988) + (scaled\_chocolate\*-0.0672802) + (scaled\_chocolate\_marshmallow\*-0.113508) + (scaled\_citrus\_fruit\*-0.0494672) + (scaled\_cleaner\*0.67564) + (scaled\_cling\_film\_div\_bags\*-0.113177) + (scaled\_cocoa\_drinks\*0.144568) + (scaled\_coffee\*0.189572) + (scaled\_condensed\_milk\*0.225205) + (scaled\_cooking\_chocolate\*0.0844738) + (scaled\_cookware\*0.336138) + (scaled\_cream\*-1.40795) + (scaled\_cream\_cheese\*0.0891872) + (scaled\_curd\*-0.0345282) + (scaled\_curd\_cheese\*-0.13451) + (scaled\_decalci\_fier\*-1.18142) + (scaled\_dental\_care\*0.417753) + (scaled\_dessert\*0.142046) + (scaled\_detergent\*0.0642936) + (scaled\_dish\_cleaner\*-0.293868) + (scaled\_dishes\*-0.132051) + (scaled\_dog\_food\*-0.24266) + (scaled\_domestic\_eggs\*-0.0578415) + (scaled\_female\_sanitary\_products\*-0.231702) + (scaled\_finished\_products\*1.19838) + (scaled\_fish\*-0.548034) + (scaled\_flour\*-0.31002) + (scaled\_flower\_\_seeds\_\*-0.252454) + (scaled\_flower\_soil\_div\_fertilizer\*0.543271) + (scaled\_frankfurter\*0.0893972) + (scaled\_frozen\_chicken\*-0.239343) + (scaled\_frozen\_dessert\*0.690422) + (scaled\_frozen\_fish\*0.121129) + (scaled\_frozen\_fruits\*4.17737) + (scaled\_frozen\_meals\*0.131031) + (scaled\_frozen\_potato\_products\*0.0945429) + (scaled\_frozen\_vegetables\*0.217766) + (scaled\_fruit\_div\_vegetable\_juice\*0.227983) + (scaled\_grapes\*0.102147) + (scaled\_hair\_spray\*-0.38228) + (scaled\_ham\*-0.36081) + (scaled\_hamburger\_meat\*0.0252802) + (scaled\_hard\_cheese\*-0.0394501) + (scaled\_herbs\*0.0791463) + (scaled\_honey\*0.552706) + (scaled\_house\_keeping\_products\*0.272401) + (scaled\_hygiene\_articles\*-0.170888) + (scaled\_ice\_cream\*0.263139) + (scaled\_instant\_coffee\*0.483468) + (scaled\_Instant\_food\_products\*0.176419) + (scaled\_jam\*0.427807) + (scaled\_ketchup\*0.628441) + (scaled\_kitchen\_towels\*0.124996) + (scaled\_kitchen\_utensil\*0.005099) + (scaled\_light\_bulbs\*-0.0935851) + (scaled\_liqueur\*0.454933) + (scaled\_liquor\*-0.458188) + (scaled\_liquor\_\_appetizer\_\*-0.326978) + (scaled\_liver\_loaf\*-0.111152) + (scaled\_long\_li\_fe\_bakery\_product\*-0.137794) + (scaled\_make\_up\_remover\*-2.09111) + (scaled\_male\_cosmetics\*-0.392625) + (scaled\_margarine\*-0.0830678) + (scaled\_mayonnaise\*-0.0128378) + (scaled\_meat\*-0.118037) + (scaled\_meat\_spreads\*0.43022) + (scaled\_misc\_\_beverages\*0.076605) + (scaled\_mustard\*-0.304747) + (scaled\_napkins\*-0.134397) + (scaled\_ne\_wspapers\*0.199948) + (scaled\_nut\_snack\*0.162333) + (scaled\_nuts\_div\_prunes\*0.278648) + (scaled\_oil\*0.00844732) + (scaled\_onions\*0.0194089) + (scaled\_organic\_products\*-0.603472) + (scaled\_organic\_sausage\*0.87532) + (scaled\_other\_vegetables\*-0.185631) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.12846) + (scaled\_pasta\*0.176908) + (scaled\_pastr\_y\*-0.163969) + (scaled\_pet\_care\*0.260434) + (scaled\_photo\_div\_film\*0.0550712) + (scaled\_pickled\_vegetables\*-0.00158512) + (scaled\_pip\_fruit\*-0.12771) + (scaled\_popcorn\*0.0730435) + (scaled\_pork\*0.113555) + (scaled\_pot\_plants\*0.12437) + (scaled\_potato\_products\*0.439875) + (scaled\_preservation\_products\*-1.06688) + (scaled\_processed\_cheese\*0.120964) + (scaled\_prosecco\*-1.27677) + (scaled\_pudding\_powder\*-0.191205) + (scaled\_ready\_soups\*3.31018) + (scaled\_red\_div\_blush\_wine\*0.425993) + (scaled\_rice\*0.420447) + (scaled\_roll\_products\*0.024754) + (scaled\_rolls\_div\_buns\*-1.16863) + (scaled\_root\_vegetables\*0.725561) + (scaled\_rubbing\_alcohol\*0.245961) + (scaled\_rum\*-0.647981) + (scaled\_salad\_dressing\*-0.461958) + (scaled\_salt\*0.117971) + (scaled\_salty\_snack\*0.107358) + (scaled\_sauces\*0.528899) + (scaled\_sausage\*0.355298) + (scaled\_seasonal\_products\*-0.1262) + (scaled\_semi\_res\_finished\_bread\*-0.210751) + (scaled\_shopping\_bags\*0.204174) + (scaled\_skin\_care\*0.180663) + (scaled\_sliced\_cheese\*0.141976) + (scaled\_snack\_products\*-0.73478) + (scaled\_soap\*-0.876842) + (scaled\_soda\*2.45434) + (scaled\_soft\_cheese\*0.269785) + (scaled\_softener\*0.208863) + (scaled\_sound\_storage\_medium\*0.0628788) + (scaled\_soups\*0.184332) + (scaled\_sparkling\_wine\*-0.14736) + (scaled\_specialty\_bar\*0.252254) + (scaled\_specialty\_cheese\*-0.344252) + (scaled\_specialty\_chocolate\*-0.254438) + (scaled\_specialty\_fat\*0.184101) + (scaled\_specialty\_vegetables\*0.212388) + (scaled\_spices\*0.259119) + (scaled\_spread\_cheese\*0.323555) + (scaled\_sugar\*-0.236134) + (scaled\_sweet\_spreads\*0.735649) + (scaled\_syrup\*-1.77629) + (scaled\_tea\*1.65022) + (scaled\_tidbits\*-1.77178) + (scaled\_toilet\_cleaner\*-0.0763735) + (scaled\_tropical\_fruit\*-0.144189) + (scaled\_turkey\*-0.0615304) + (scaled\_UHT\_res\_milk\*0.096632) + (scaled\_vinegar\*1.0184) + (scaled\_waffles\*0.0266049) + (scaled\_whipped\_div\_sour\_cream\*0.186853) + (scaled\_whisky\*-0.340106) + (scaled\_white\_bread\*-0.11221) + (scaled\_white\_wine\*-0.0317594) + (scaled\_whole\_milk\*1.64011) + (scaled\_yogurt\*-0.152486) + (scaled\_zwieback\*0.0705297) );

mapping\_layer\_output\_3 = tanh( -0.798475 + (scaled\_abrasive\_cleaner\*-0.233631) + (scaled\_arti\_f\_\_sweetener\*-0.0319213) + (scaled\_baby\_cosmetics\*0.00751865) + (scaled\_baby\_food\*-1.35594) + (scaled\_bags\*0.0177785) + (scaled\_baking\_powder\*0.140187) + (scaled\_bathroom\_cleaner\*-0.468604) + (scaled\_beef\*-0.11811) + (scaled\_berries\*0.0756825) + (scaled\_beverages\*-0.00769333) + (scaled\_bottled\_beer\*0.175303) + (scaled\_bottled\_water\*-0.0620648) + (scaled\_brandy\*-0.36029) + (scaled\_brown\_bread\*-0.0153807) + (scaled\_butter\*0.177526) + (scaled\_butter\_milk\*0.0420583) + (scaled\_cake\_bar\*-0.00820412) + (scaled\_candles\*-0.0828212) + (scaled\_candy\*-0.0182607) + (scaled\_canned\_beer\*0.150049) + (scaled\_canned\_fish\*0.204792) + (scaled\_canned\_fruit\*0.119307) + (scaled\_canned\_vegetables\*-0.00139911) + (scaled\_cat\_food\*0.11877) + (scaled\_cereals\*-0.456125) + (scaled\_chewing\_gum\*-0.0399438) + (scaled\_chicken\*0.0204534) + (scaled\_chocolate\*0.069109) + (scaled\_chocolate\_marshmallow\*-0.0518159) + (scaled\_citrus\_fruit\*0.197081) + (scaled\_cleaner\*0.230602) + (scaled\_cling\_film\_div\_bags\*-0.347263) + (scaled\_cocoa\_drinks\*-0.208722) + (scaled\_coffee\*-0.228769) + (scaled\_condensed\_milk\*-0.242173) + (scaled\_cooking\_chocolate\*0.0481687) + (scaled\_cookware\*-0.0682028) + (scaled\_cream\*-0.805304) + (scaled\_cream\_cheese\*0.0185536) + (scaled\_curd\*0.200316) + (scaled\_curd\_cheese\*-0.0162396) + (scaled\_decalci\_fier\*0.598014) + (scaled\_dental\_care\*-0.0995267) + (scaled\_dessert\*-0.0100087) + (scaled\_detergent\*0.073797) + (scaled\_dish\_cleaner\*0.139567) + (scaled\_dishes\*-0.181204) + (scaled\_dog\_food\*0.172438) + (scaled\_domestic\_eggs\*0.274853) + (scaled\_female\_sanitary\_products\*-0.154983) + (scaled\_finished\_products\*-0.114303) + (scaled\_fish\*-0.299982) + (scaled\_flour\*-0.148986) + (scaled\_flower\_\_seeds\_\*-0.201952) + (scaled\_flower\_soil\_div\_fertilizer\*-0.488948) + (scaled\_frankfurter\*-0.134403) + (scaled\_frozen\_chicken\*0.271538) + (scaled\_frozen\_dessert\*0.0557512) + (scaled\_frozen\_fish\*0.0414843) + (scaled\_frozen\_fruits\*-0.585104) + (scaled\_frozen\_meals\*-0.0232502) + (scaled\_frozen\_potato\_products\*-0.209923) + (scaled\_frozen\_vegetables\*-0.112895) + (scaled\_fruit\_div\_vegetable\_juice\*0.177432) + (scaled\_grapes\*-0.186689) + (scaled\_hair\_spray\*-0.680314) + (scaled\_ham\*-0.197244) + (scaled\_hamburger\_meat\*0.166579) + (scaled\_hard\_cheese\*0.0826656) + (scaled\_herbs\*0.133427) + (scaled\_honey\*-0.418589) + (scaled\_house\_keeping\_products\*-0.45376) + (scaled\_hygiene\_articles\*0.165001) + (scaled\_ice\_cream\*0.253192) + (scaled\_instant\_coffee\*0.117092) + (scaled\_Instant\_food\_products\*0.0174531) + (scaled\_jam\*-0.0392431) + (scaled\_ketchup\*-0.322323) + (scaled\_kitchen\_towels\*-0.215848) + (scaled\_kitchen\_utensil\*-0.972497) + (scaled\_light\_bulbs\*-0.123163) + (scaled\_liqueur\*0.872819) + (scaled\_liquor\*0.050221) + (scaled\_liquor\_\_appetizer\_\*0.167899) + (scaled\_liver\_loaf\*0.537614) + (scaled\_long\_li\_fe\_bakery\_product\*0.0407274) + (scaled\_make\_up\_remover\*-0.423322) + (scaled\_male\_cosmetics\*0.725484) + (scaled\_margarine\*0.14656) + (scaled\_mayonnaise\*-0.22947) + (scaled\_meat\*-0.0101474) + (scaled\_meat\_spreads\*0.0276222) + (scaled\_misc\_\_beverages\*0.205934) + (scaled\_mustard\*-0.101513) + (scaled\_napkins\*0.172098) + (scaled\_ne\_wspapers\*-0.138882) + (scaled\_nut\_snack\*-1.0122) + (scaled\_nuts\_div\_prunes\*-0.0149065) + (scaled\_oil\*-0.0225394) + (scaled\_onions\*0.0744107) + (scaled\_organic\_products\*0.0227783) + (scaled\_organic\_sausage\*0.611195) + (scaled\_other\_vegetables\*0.100515) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.13536) + (scaled\_pasta\*0.14531) + (scaled\_pastr\_y\*0.227763) + (scaled\_pet\_care\*-0.462018) + (scaled\_photo\_div\_film\*-0.165627) + (scaled\_pickled\_vegetables\*0.0134167) + (scaled\_pip\_fruit\*0.165713) + (scaled\_popcorn\*0.596479) + (scaled\_pork\*0.0987007) + (scaled\_pot\_plants\*0.0346553) + (scaled\_potato\_products\*-0.350639) + (scaled\_preservation\_products\*-1.02595) + (scaled\_processed\_cheese\*-0.173512) + (scaled\_prosecco\*-0.560044) + (scaled\_pudding\_powder\*0.113981) + (scaled\_ready\_soups\*0.0572624) + (scaled\_red\_div\_blush\_wine\*-0.450467) + (scaled\_rice\*-0.232783) + (scaled\_roll\_products\*-0.319711) + (scaled\_rolls\_div\_buns\*0.559439) + (scaled\_root\_vegetables\*0.0209265) + (scaled\_rubbing\_alcohol\*-0.387888) + (scaled\_rum\*0.146761) + (scaled\_salad\_dressing\*0.16299) + (scaled\_salt\*-0.265547) + (scaled\_salty\_snack\*0.0373711) + (scaled\_sauces\*0.0876193) + (scaled\_sausage\*0.0729254) + (scaled\_seasonal\_products\*0.100781) + (scaled\_semi\_res\_finished\_bread\*-0.328293) + (scaled\_shopping\_bags\*0.412671) + (scaled\_skin\_care\*0.410762) + (scaled\_sliced\_cheese\*0.0828838) + (scaled\_snack\_products\*0.204947) + (scaled\_soap\*0.237987) + (scaled\_soda\*0.482921) + (scaled\_soft\_cheese\*0.128224) + (scaled\_softener\*-0.0466804) + (scaled\_sound\_storage\_medium\*1.25442) + (scaled\_soups\*-0.0230484) + (scaled\_sparkling\_wine\*-0.181469) + (scaled\_specialty\_bar\*-0.302257) + (scaled\_specialty\_cheese\*-0.228416) + (scaled\_specialty\_chocolate\*-0.0444683) + (scaled\_specialty\_fat\*-0.22328) + (scaled\_specialty\_vegetables\*0.405394) + (scaled\_spices\*0.479531) + (scaled\_spread\_cheese\*0.116872) + (scaled\_sugar\*0.302331) + (scaled\_sweet\_spreads\*-0.353547) + (scaled\_syrup\*-0.423966) + (scaled\_tea\*-0.0825818) + (scaled\_tidbits\*-0.0839698) + (scaled\_toilet\_cleaner\*-0.124679) + (scaled\_tropical\_fruit\*0.318639) + (scaled\_turkey\*-0.387888) + (scaled\_UHT\_res\_milk\*-0.046011) + (scaled\_vinegar\*-0.440633) + (scaled\_waffles\*-0.0401172) + (scaled\_whipped\_div\_sour\_cream\*0.466955) + (scaled\_whisky\*-0.218523) + (scaled\_white\_bread\*0.0423613) + (scaled\_white\_wine\*-0.195931) + (scaled\_whole\_milk\*-4.36004) + (scaled\_yogurt\*-0.475684) + (scaled\_zwieback\*-0.0736587) );

mapping\_layer\_output\_4 = tanh( 0.395332 + (scaled\_abrasive\_cleaner\*-0.522745) + (scaled\_arti\_f\_\_sweetener\*-0.363109) + (scaled\_baby\_cosmetics\*0.894425) + (scaled\_baby\_food\*-0.794529) + (scaled\_bags\*0.123982) + (scaled\_baking\_powder\*-0.291865) + (scaled\_bathroom\_cleaner\*0.273111) + (scaled\_beef\*-0.170612) + (scaled\_berries\*0.0778237) + (scaled\_beverages\*-0.11175) + (scaled\_bottled\_beer\*0.125733) + (scaled\_bottled\_water\*-0.359467) + (scaled\_brandy\*0.595757) + (scaled\_brown\_bread\*-0.103593) + (scaled\_butter\*0.182849) + (scaled\_butter\_milk\*-0.0657061) + (scaled\_cake\_bar\*0.134601) + (scaled\_candles\*0.526611) + (scaled\_candy\*-0.388149) + (scaled\_canned\_beer\*-0.631177) + (scaled\_canned\_fish\*-0.103162) + (scaled\_canned\_fruit\*-0.139226) + (scaled\_canned\_vegetables\*0.0692577) + (scaled\_cat\_food\*0.211718) + (scaled\_cereals\*0.0371173) + (scaled\_chewing\_gum\*-0.0555163) + (scaled\_chicken\*0.166638) + (scaled\_chocolate\*-0.028364) + (scaled\_chocolate\_marshmallow\*-0.0348192) + (scaled\_citrus\_fruit\*-0.296005) + (scaled\_cleaner\*0.234358) + (scaled\_cling\_film\_div\_bags\*0.201724) + (scaled\_cocoa\_drinks\*-0.0333659) + (scaled\_coffee\*-0.0884136) + (scaled\_condensed\_milk\*0.208138) + (scaled\_cooking\_chocolate\*0.625314) + (scaled\_cookware\*-0.395137) + (scaled\_cream\*-0.367849) + (scaled\_cream\_cheese\*0.0506076) + (scaled\_curd\*0.00146293) + (scaled\_curd\_cheese\*-0.107948) + (scaled\_decalci\_fier\*0.614301) + (scaled\_dental\_care\*-0.422694) + (scaled\_dessert\*0.0608379) + (scaled\_detergent\*-0.119923) + (scaled\_dish\_cleaner\*-0.0034147) + (scaled\_dishes\*0.246965) + (scaled\_dog\_food\*0.495687) + (scaled\_domestic\_eggs\*0.115187) + (scaled\_female\_sanitary\_products\*-0.115003) + (scaled\_finished\_products\*0.200961) + (scaled\_fish\*0.0784392) + (scaled\_flour\*0.262274) + (scaled\_flower\_\_seeds\_\*0.251838) + (scaled\_flower\_soil\_div\_fertilizer\*-1.58876) + (scaled\_frankfurter\*-0.175401) + (scaled\_frozen\_chicken\*-1.22618) + (scaled\_frozen\_dessert\*-0.52337) + (scaled\_frozen\_fish\*0.383338) + (scaled\_frozen\_fruits\*0.103465) + (scaled\_frozen\_meals\*0.312635) + (scaled\_frozen\_potato\_products\*0.127609) + (scaled\_frozen\_vegetables\*-0.177874) + (scaled\_fruit\_div\_vegetable\_juice\*0.0760084) + (scaled\_grapes\*-0.020057) + (scaled\_hair\_spray\*-0.0806892) + (scaled\_ham\*0.0829467) + (scaled\_hamburger\_meat\*-0.129159) + (scaled\_hard\_cheese\*-0.0444166) + (scaled\_herbs\*-0.121318) + (scaled\_honey\*-0.440021) + (scaled\_house\_keeping\_products\*0.000159797) + (scaled\_hygiene\_articles\*-0.0167712) + (scaled\_ice\_cream\*-0.136614) + (scaled\_instant\_coffee\*-0.349341) + (scaled\_Instant\_food\_products\*-0.0372067) + (scaled\_jam\*-0.181735) + (scaled\_ketchup\*0.188962) + (scaled\_kitchen\_towels\*-0.33288) + (scaled\_kitchen\_utensil\*-0.0472193) + (scaled\_light\_bulbs\*0.0332786) + (scaled\_liqueur\*-0.184228) + (scaled\_liquor\*0.290251) + (scaled\_liquor\_\_appetizer\_\*0.309922) + (scaled\_liver\_loaf\*0.307963) + (scaled\_long\_li\_fe\_bakery\_product\*0.0636628) + (scaled\_make\_up\_remover\*0.281407) + (scaled\_male\_cosmetics\*0.0706856) + (scaled\_margarine\*-0.19009) + (scaled\_mayonnaise\*0.115044) + (scaled\_meat\*0.36316) + (scaled\_meat\_spreads\*0.553472) + (scaled\_misc\_\_beverages\*-0.261303) + (scaled\_mustard\*0.665051) + (scaled\_napkins\*-0.235203) + (scaled\_ne\_wspapers\*-0.0214509) + (scaled\_nut\_snack\*0.421159) + (scaled\_nuts\_div\_prunes\*0.370165) + (scaled\_oil\*-0.0831593) + (scaled\_onions\*-0.284836) + (scaled\_organic\_products\*-0.0516562) + (scaled\_organic\_sausage\*0.0493753) + (scaled\_other\_vegetables\*-0.805908) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.437645) + (scaled\_pasta\*-0.00883488) + (scaled\_pastr\_y\*0.0409962) + (scaled\_pet\_care\*0.0645772) + (scaled\_photo\_div\_film\*-0.123174) + (scaled\_pickled\_vegetables\*-0.0584781) + (scaled\_pip\_fruit\*-0.154889) + (scaled\_popcorn\*0.122574) + (scaled\_pork\*0.348753) + (scaled\_pot\_plants\*-0.00864627) + (scaled\_potato\_products\*-0.936727) + (scaled\_preservation\_products\*0.309975) + (scaled\_processed\_cheese\*0.131368) + (scaled\_prosecco\*1.35237) + (scaled\_pudding\_powder\*-0.637628) + (scaled\_ready\_soups\*-0.248006) + (scaled\_red\_div\_blush\_wine\*0.434089) + (scaled\_rice\*-0.0767611) + (scaled\_roll\_products\*0.16319) + (scaled\_rolls\_div\_buns\*0.915183) + (scaled\_root\_vegetables\*-0.315829) + (scaled\_rubbing\_alcohol\*-0.0126207) + (scaled\_rum\*-0.12668) + (scaled\_salad\_dressing\*-0.251012) + (scaled\_salt\*-0.18334) + (scaled\_salty\_snack\*0.121012) + (scaled\_sauces\*0.268526) + (scaled\_sausage\*-0.0734609) + (scaled\_seasonal\_products\*-0.0199636) + (scaled\_semi\_res\_finished\_bread\*-0.262636) + (scaled\_shopping\_bags\*-0.234511) + (scaled\_skin\_care\*0.663413) + (scaled\_sliced\_cheese\*0.0703004) + (scaled\_snack\_products\*-2.05245) + (scaled\_soap\*2.01135) + (scaled\_soda\*0.313943) + (scaled\_soft\_cheese\*0.0248559) + (scaled\_softener\*0.0395891) + (scaled\_sound\_storage\_medium\*1.36997) + (scaled\_soups\*0.183786) + (scaled\_sparkling\_wine\*-0.352043) + (scaled\_specialty\_bar\*-0.0882788) + (scaled\_specialty\_cheese\*-0.53519) + (scaled\_specialty\_chocolate\*-0.0953776) + (scaled\_specialty\_fat\*0.3501) + (scaled\_specialty\_vegetables\*0.30847) + (scaled\_spices\*0.00986669) + (scaled\_spread\_cheese\*-0.374636) + (scaled\_sugar\*0.220632) + (scaled\_sweet\_spreads\*-0.405318) + (scaled\_syrup\*1.01289) + (scaled\_tea\*0.146752) + (scaled\_tidbits\*0.837996) + (scaled\_toilet\_cleaner\*0.248045) + (scaled\_tropical\_fruit\*-0.227232) + (scaled\_turkey\*0.245543) + (scaled\_UHT\_res\_milk\*-0.0644238) + (scaled\_vinegar\*-0.271835) + (scaled\_waffles\*-0.0737316) + (scaled\_whipped\_div\_sour\_cream\*0.121988) + (scaled\_whisky\*0.720707) + (scaled\_white\_bread\*0.0104977) + (scaled\_white\_wine\*-0.434613) + (scaled\_whole\_milk\*0.619469) + (scaled\_yogurt\*-0.246617) + (scaled\_zwieback\*-0.294063) );

mapping\_layer\_output\_5 = tanh( 0.410801 + (scaled\_abrasive\_cleaner\*-0.718182) + (scaled\_arti\_f\_\_sweetener\*1.03375) + (scaled\_baby\_cosmetics\*-0.0588882) + (scaled\_baby\_food\*0.0772384) + (scaled\_bags\*-0.307758) + (scaled\_baking\_powder\*0.109938) + (scaled\_bathroom\_cleaner\*0.948395) + (scaled\_beef\*0.131285) + (scaled\_berries\*0.0939457) + (scaled\_beverages\*-0.00115435) + (scaled\_bottled\_beer\*0.341408) + (scaled\_bottled\_water\*1.80253) + (scaled\_brandy\*-0.320386) + (scaled\_brown\_bread\*0.100898) + (scaled\_butter\*0.367349) + (scaled\_butter\_milk\*-0.0328368) + (scaled\_cake\_bar\*-0.0659652) + (scaled\_candles\*-0.287355) + (scaled\_candy\*0.299763) + (scaled\_canned\_beer\*0.616104) + (scaled\_canned\_fish\*0.281077) + (scaled\_canned\_fruit\*0.561209) + (scaled\_canned\_vegetables\*0.227187) + (scaled\_cat\_food\*0.155846) + (scaled\_cereals\*-0.0586079) + (scaled\_chewing\_gum\*0.000935098) + (scaled\_chicken\*0.266893) + (scaled\_chocolate\*-0.0369139) + (scaled\_chocolate\_marshmallow\*0.240275) + (scaled\_citrus\_fruit\*0.304612) + (scaled\_cleaner\*-0.00420548) + (scaled\_cling\_film\_div\_bags\*0.38447) + (scaled\_cocoa\_drinks\*-1.04349) + (scaled\_coffee\*0.69321) + (scaled\_condensed\_milk\*0.210627) + (scaled\_cooking\_chocolate\*1.07404) + (scaled\_cookware\*0.414154) + (scaled\_cream\*0.918219) + (scaled\_cream\_cheese\*0.121351) + (scaled\_curd\*0.0654263) + (scaled\_curd\_cheese\*0.0355953) + (scaled\_decalci\_fier\*0.293792) + (scaled\_dental\_care\*-0.325536) + (scaled\_dessert\*0.020125) + (scaled\_detergent\*0.100759) + (scaled\_dish\_cleaner\*0.369898) + (scaled\_dishes\*-0.0283842) + (scaled\_dog\_food\*1.17837) + (scaled\_domestic\_eggs\*0.245733) + (scaled\_female\_sanitary\_products\*-0.143643) + (scaled\_finished\_products\*0.683892) + (scaled\_fish\*0.644779) + (scaled\_flour\*-0.132024) + (scaled\_flower\_\_seeds\_\*-0.0710065) + (scaled\_flower\_soil\_div\_fertilizer\*-1.55719) + (scaled\_frankfurter\*0.0980969) + (scaled\_frozen\_chicken\*-0.301118) + (scaled\_frozen\_dessert\*0.121667) + (scaled\_frozen\_fish\*-0.0168687) + (scaled\_frozen\_fruits\*0.977437) + (scaled\_frozen\_meals\*-0.327645) + (scaled\_frozen\_potato\_products\*0.290782) + (scaled\_frozen\_vegetables\*0.0990207) + (scaled\_fruit\_div\_vegetable\_juice\*-0.0296326) + (scaled\_grapes\*0.281443) + (scaled\_hair\_spray\*-0.131877) + (scaled\_ham\*-0.22977) + (scaled\_hamburger\_meat\*0.425562) + (scaled\_hard\_cheese\*0.071623) + (scaled\_herbs\*-0.0611812) + (scaled\_honey\*0.845618) + (scaled\_house\_keeping\_products\*0.779077) + (scaled\_hygiene\_articles\*0.274689) + (scaled\_ice\_cream\*-0.599509) + (scaled\_instant\_coffee\*0.092662) + (scaled\_Instant\_food\_products\*0.382634) + (scaled\_jam\*0.332813) + (scaled\_ketchup\*0.060516) + (scaled\_kitchen\_towels\*-0.181057) + (scaled\_kitchen\_utensil\*0.10248) + (scaled\_light\_bulbs\*0.534833) + (scaled\_liqueur\*-1.01646) + (scaled\_liquor\*-0.133118) + (scaled\_liquor\_\_appetizer\_\*0.364447) + (scaled\_liver\_loaf\*-0.12603) + (scaled\_long\_li\_fe\_bakery\_product\*0.072628) + (scaled\_make\_up\_remover\*1.45823) + (scaled\_male\_cosmetics\*0.41421) + (scaled\_margarine\*0.462001) + (scaled\_mayonnaise\*-0.120572) + (scaled\_meat\*0.192716) + (scaled\_meat\_spreads\*-0.656092) + (scaled\_misc\_\_beverages\*0.242913) + (scaled\_mustard\*0.147706) + (scaled\_napkins\*0.292151) + (scaled\_ne\_wspapers\*-0.154982) + (scaled\_nut\_snack\*0.165777) + (scaled\_nuts\_div\_prunes\*0.394163) + (scaled\_oil\*0.312834) + (scaled\_onions\*0.254836) + (scaled\_organic\_products\*2.15989) + (scaled\_organic\_sausage\*0.181016) + (scaled\_other\_vegetables\*0.449021) + (scaled\_packaged\_fruit\_div\_vegetables\*0.147228) + (scaled\_pasta\*0.039855) + (scaled\_pastr\_y\*-0.39804) + (scaled\_pet\_care\*-0.116936) + (scaled\_photo\_div\_film\*-0.510651) + (scaled\_pickled\_vegetables\*0.0245124) + (scaled\_pip\_fruit\*0.375676) + (scaled\_popcorn\*0.250973) + (scaled\_pork\*0.0611506) + (scaled\_pot\_plants\*0.257565) + (scaled\_potato\_products\*1.56408) + (scaled\_preservation\_products\*1.99584) + (scaled\_processed\_cheese\*0.259465) + (scaled\_prosecco\*0.0431431) + (scaled\_pudding\_powder\*-0.979781) + (scaled\_ready\_soups\*-0.160294) + (scaled\_red\_div\_blush\_wine\*-0.123356) + (scaled\_rice\*-0.224066) + (scaled\_roll\_products\*-0.361736) + (scaled\_rolls\_div\_buns\*-3.76937) + (scaled\_root\_vegetables\*1.15351) + (scaled\_rubbing\_alcohol\*1.55337) + (scaled\_rum\*0.222185) + (scaled\_salad\_dressing\*-0.0169872) + (scaled\_salt\*-0.373717) + (scaled\_salty\_snack\*0.0768715) + (scaled\_sauces\*-0.0892572) + (scaled\_sausage\*-0.326178) + (scaled\_seasonal\_products\*-0.0426708) + (scaled\_semi\_res\_finished\_bread\*-0.0497966) + (scaled\_shopping\_bags\*1.16689) + (scaled\_skin\_care\*0.327559) + (scaled\_sliced\_cheese\*-0.123636) + (scaled\_snack\_products\*-0.105329) + (scaled\_soap\*-0.667466) + (scaled\_soda\*0.435074) + (scaled\_soft\_cheese\*0.000444742) + (scaled\_softener\*0.275482) + (scaled\_sound\_storage\_medium\*-2.27226) + (scaled\_soups\*0.32396) + (scaled\_sparkling\_wine\*-0.104602) + (scaled\_specialty\_bar\*0.214731) + (scaled\_specialty\_cheese\*0.235632) + (scaled\_specialty\_chocolate\*0.274644) + (scaled\_specialty\_fat\*0.465577) + (scaled\_specialty\_vegetables\*3.00038) + (scaled\_spices\*-0.50181) + (scaled\_spread\_cheese\*0.0735677) + (scaled\_sugar\*-0.22374) + (scaled\_sweet\_spreads\*0.161885) + (scaled\_syrup\*-0.332404) + (scaled\_tea\*-0.433424) + (scaled\_tidbits\*0.291907) + (scaled\_toilet\_cleaner\*0.323639) + (scaled\_tropical\_fruit\*0.900853) + (scaled\_turkey\*-0.261605) + (scaled\_UHT\_res\_milk\*0.070647) + (scaled\_vinegar\*0.0461641) + (scaled\_waffles\*-0.0845962) + (scaled\_whipped\_div\_sour\_cream\*0.878914) + (scaled\_whisky\*-0.0725849) + (scaled\_white\_bread\*0.423838) + (scaled\_white\_wine\*0.790461) + (scaled\_whole\_milk\*0.164907) + (scaled\_yogurt\*9.31829) + (scaled\_zwieback\*-0.16481) );

mapping\_layer\_output\_6 = tanh( -0.366119 + (scaled\_abrasive\_cleaner\*-0.546974) + (scaled\_arti\_f\_\_sweetener\*-0.340971) + (scaled\_baby\_cosmetics\*0.279475) + (scaled\_baby\_food\*-0.372472) + (scaled\_bags\*0.0881545) + (scaled\_baking\_powder\*0.0693175) + (scaled\_bathroom\_cleaner\*0.275415) + (scaled\_beef\*-0.121828) + (scaled\_berries\*0.149492) + (scaled\_beverages\*0.354237) + (scaled\_bottled\_beer\*-0.273144) + (scaled\_bottled\_water\*-0.728229) + (scaled\_brandy\*-0.676601) + (scaled\_brown\_bread\*0.283268) + (scaled\_butter\*0.264621) + (scaled\_butter\_milk\*0.11089) + (scaled\_cake\_bar\*-0.611936) + (scaled\_candles\*-0.20406) + (scaled\_candy\*0.337883) + (scaled\_canned\_beer\*1.64907) + (scaled\_canned\_fish\*-0.0248687) + (scaled\_canned\_fruit\*0.239943) + (scaled\_canned\_vegetables\*0.24987) + (scaled\_cat\_food\*0.630013) + (scaled\_cereals\*-0.603222) + (scaled\_chewing\_gum\*0.194417) + (scaled\_chicken\*0.0889909) + (scaled\_chocolate\*0.037321) + (scaled\_chocolate\_marshmallow\*-0.0032238) + (scaled\_citrus\_fruit\*0.015319) + (scaled\_cleaner\*-0.485106) + (scaled\_cling\_film\_div\_bags\*0.469302) + (scaled\_cocoa\_drinks\*0.999545) + (scaled\_coffee\*-0.588204) + (scaled\_condensed\_milk\*0.14544) + (scaled\_cooking\_chocolate\*0.330655) + (scaled\_cookware\*0.133844) + (scaled\_cream\*1.15273) + (scaled\_cream\_cheese\*-0.0480289) + (scaled\_curd\*0.0593926) + (scaled\_curd\_cheese\*-0.342868) + (scaled\_decalci\_fier\*-0.208703) + (scaled\_dental\_care\*-0.179313) + (scaled\_dessert\*-0.0196898) + (scaled\_detergent\*0.201717) + (scaled\_dish\_cleaner\*-0.227259) + (scaled\_dishes\*0.311284) + (scaled\_dog\_food\*-0.125252) + (scaled\_domestic\_eggs\*0.283329) + (scaled\_female\_sanitary\_products\*0.115173) + (scaled\_finished\_products\*-0.0750169) + (scaled\_fish\*0.508246) + (scaled\_flour\*-0.236542) + (scaled\_flower\_\_seeds\_\*0.281076) + (scaled\_flower\_soil\_div\_fertilizer\*0.0312797) + (scaled\_frankfurter\*0.0948113) + (scaled\_frozen\_chicken\*0.165469) + (scaled\_frozen\_dessert\*-0.148918) + (scaled\_frozen\_fish\*-0.124128) + (scaled\_frozen\_fruits\*-1.22996) + (scaled\_frozen\_meals\*-0.123796) + (scaled\_frozen\_potato\_products\*0.219527) + (scaled\_frozen\_vegetables\*-0.0448907) + (scaled\_fruit\_div\_vegetable\_juice\*-0.102465) + (scaled\_grapes\*-0.14173) + (scaled\_hair\_spray\*-0.383997) + (scaled\_ham\*-0.248711) + (scaled\_hamburger\_meat\*0.109691) + (scaled\_hard\_cheese\*0.000222372) + (scaled\_herbs\*-0.32329) + (scaled\_honey\*1.32445) + (scaled\_house\_keeping\_products\*-0.287692) + (scaled\_hygiene\_articles\*0.102252) + (scaled\_ice\_cream\*-0.00633851) + (scaled\_instant\_coffee\*-0.407288) + (scaled\_Instant\_food\_products\*-0.436047) + (scaled\_jam\*-0.0052135) + (scaled\_ketchup\*0.337133) + (scaled\_kitchen\_towels\*-0.00884713) + (scaled\_kitchen\_utensil\*0.0340531) + (scaled\_light\_bulbs\*-0.278795) + (scaled\_liqueur\*-0.372798) + (scaled\_liquor\*-0.0275271) + (scaled\_liquor\_\_appetizer\_\*-0.382813) + (scaled\_liver\_loaf\*-0.0036912) + (scaled\_long\_li\_fe\_bakery\_product\*0.371043) + (scaled\_make\_up\_remover\*0.659143) + (scaled\_male\_cosmetics\*0.640287) + (scaled\_margarine\*0.0419702) + (scaled\_mayonnaise\*0.0493688) + (scaled\_meat\*0.265633) + (scaled\_meat\_spreads\*-1.07894) + (scaled\_misc\_\_beverages\*0.0385875) + (scaled\_mustard\*0.433491) + (scaled\_napkins\*0.266735) + (scaled\_ne\_wspapers\*0.0910247) + (scaled\_nut\_snack\*-0.450617) + (scaled\_nuts\_div\_prunes\*0.431483) + (scaled\_oil\*-0.00450356) + (scaled\_onions\*0.0373726) + (scaled\_organic\_products\*-0.242307) + (scaled\_organic\_sausage\*0.499719) + (scaled\_other\_vegetables\*-1.63089) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.379262) + (scaled\_pasta\*0.0797731) + (scaled\_pastr\_y\*0.259693) + (scaled\_pet\_care\*-0.525563) + (scaled\_photo\_div\_film\*-0.420505) + (scaled\_pickled\_vegetables\*0.134887) + (scaled\_pip\_fruit\*0.0767958) + (scaled\_popcorn\*0.313615) + (scaled\_pork\*0.169575) + (scaled\_pot\_plants\*0.365776) + (scaled\_potato\_products\*0.340197) + (scaled\_preservation\_products\*-0.30962) + (scaled\_processed\_cheese\*0.562084) + (scaled\_prosecco\*0.0891806) + (scaled\_pudding\_powder\*-0.792438) + (scaled\_ready\_soups\*1.42707) + (scaled\_red\_div\_blush\_wine\*-0.0760062) + (scaled\_rice\*-0.302975) + (scaled\_roll\_products\*0.111976) + (scaled\_rolls\_div\_buns\*-0.0608822) + (scaled\_root\_vegetables\*-0.309102) + (scaled\_rubbing\_alcohol\*0.515929) + (scaled\_rum\*-4.8601) + (scaled\_salad\_dressing\*-1.11328) + (scaled\_salt\*-0.178654) + (scaled\_salty\_snack\*0.0352733) + (scaled\_sauces\*0.836785) + (scaled\_sausage\*0.103) + (scaled\_seasonal\_products\*0.0318894) + (scaled\_semi\_res\_finished\_bread\*-0.0116172) + (scaled\_shopping\_bags\*-0.173703) + (scaled\_skin\_care\*0.048035) + (scaled\_sliced\_cheese\*0.189448) + (scaled\_snack\_products\*1.86975) + (scaled\_soap\*0.374712) + (scaled\_soda\*0.0115755) + (scaled\_soft\_cheese\*0.100752) + (scaled\_softener\*-0.452962) + (scaled\_sound\_storage\_medium\*0.980316) + (scaled\_soups\*0.0947695) + (scaled\_sparkling\_wine\*-0.264342) + (scaled\_specialty\_bar\*-0.315973) + (scaled\_specialty\_cheese\*0.185318) + (scaled\_specialty\_chocolate\*-0.0688447) + (scaled\_specialty\_fat\*0.614487) + (scaled\_specialty\_vegetables\*0.039007) + (scaled\_spices\*0.681706) + (scaled\_spread\_cheese\*-0.186958) + (scaled\_sugar\*0.0200235) + (scaled\_sweet\_spreads\*-0.281255) + (scaled\_syrup\*0.355014) + (scaled\_tea\*-0.291036) + (scaled\_tidbits\*0.870226) + (scaled\_toilet\_cleaner\*0.576654) + (scaled\_tropical\_fruit\*-0.183348) + (scaled\_turkey\*-0.0150513) + (scaled\_UHT\_res\_milk\*-0.0849113) + (scaled\_vinegar\*-0.561698) + (scaled\_waffles\*-0.0336794) + (scaled\_whipped\_div\_sour\_cream\*-0.153389) + (scaled\_whisky\*0.712624) + (scaled\_white\_bread\*-0.109233) + (scaled\_white\_wine\*0.334317) + (scaled\_whole\_milk\*0.240553) + (scaled\_yogurt\*-0.696529) + (scaled\_zwieback\*0.733473) );

mapping\_layer\_output\_7 = tanh( 0.640955 + (scaled\_abrasive\_cleaner\*0.777226) + (scaled\_arti\_f\_\_sweetener\*0.0962783) + (scaled\_baby\_cosmetics\*-0.916916) + (scaled\_baby\_food\*0.586342) + (scaled\_bags\*-0.00602802) + (scaled\_baking\_powder\*-0.248503) + (scaled\_bathroom\_cleaner\*-0.647594) + (scaled\_beef\*-0.23746) + (scaled\_berries\*0.263913) + (scaled\_beverages\*-0.0901113) + (scaled\_bottled\_beer\*0.168201) + (scaled\_bottled\_water\*0.406153) + (scaled\_brandy\*-0.151311) + (scaled\_brown\_bread\*-0.113566) + (scaled\_butter\*-0.462995) + (scaled\_butter\_milk\*-0.179274) + (scaled\_cake\_bar\*-0.195419) + (scaled\_candles\*0.142431) + (scaled\_candy\*-0.0842129) + (scaled\_canned\_beer\*-0.562274) + (scaled\_canned\_fish\*0.383666) + (scaled\_canned\_fruit\*-0.413598) + (scaled\_canned\_vegetables\*-0.00395181) + (scaled\_cat\_food\*0.147196) + (scaled\_cereals\*-0.556041) + (scaled\_chewing\_gum\*-0.00814461) + (scaled\_chicken\*0.0366126) + (scaled\_chocolate\*0.286037) + (scaled\_chocolate\_marshmallow\*0.184604) + (scaled\_citrus\_fruit\*0.478764) + (scaled\_cleaner\*-0.00562697) + (scaled\_cling\_film\_div\_bags\*0.0462378) + (scaled\_cocoa\_drinks\*-0.884343) + (scaled\_coffee\*-0.0921702) + (scaled\_condensed\_milk\*0.412834) + (scaled\_cooking\_chocolate\*-0.952895) + (scaled\_cookware\*0.0603823) + (scaled\_cream\*1.23092) + (scaled\_cream\_cheese\*0.0164828) + (scaled\_curd\*-0.156737) + (scaled\_curd\_cheese\*-0.138091) + (scaled\_decalci\_fier\*0.701778) + (scaled\_dental\_care\*0.974213) + (scaled\_dessert\*0.144261) + (scaled\_detergent\*-0.282966) + (scaled\_dish\_cleaner\*0.145744) + (scaled\_dishes\*-0.151944) + (scaled\_dog\_food\*0.127758) + (scaled\_domestic\_eggs\*-0.216449) + (scaled\_female\_sanitary\_products\*-0.251909) + (scaled\_finished\_products\*-0.275746) + (scaled\_fish\*-0.179158) + (scaled\_flour\*0.289293) + (scaled\_flower\_\_seeds\_\*0.468527) + (scaled\_flower\_soil\_div\_fertilizer\*-0.176104) + (scaled\_frankfurter\*-0.305228) + (scaled\_frozen\_chicken\*-0.226925) + (scaled\_frozen\_dessert\*0.466497) + (scaled\_frozen\_fish\*0.353223) + (scaled\_frozen\_fruits\*-0.0780397) + (scaled\_frozen\_meals\*0.0678274) + (scaled\_frozen\_potato\_products\*0.144128) + (scaled\_frozen\_vegetables\*-0.166322) + (scaled\_fruit\_div\_vegetable\_juice\*0.18316) + (scaled\_grapes\*0.0812017) + (scaled\_hair\_spray\*-0.667502) + (scaled\_ham\*-0.282056) + (scaled\_hamburger\_meat\*-0.219032) + (scaled\_hard\_cheese\*-0.367256) + (scaled\_herbs\*0.268908) + (scaled\_honey\*-0.709525) + (scaled\_house\_keeping\_products\*0.248468) + (scaled\_hygiene\_articles\*-0.0191078) + (scaled\_ice\_cream\*0.639773) + (scaled\_instant\_coffee\*-0.0728387) + (scaled\_Instant\_food\_products\*0.463147) + (scaled\_jam\*-0.0983697) + (scaled\_ketchup\*0.101847) + (scaled\_kitchen\_towels\*0.214702) + (scaled\_kitchen\_utensil\*0.341385) + (scaled\_light\_bulbs\*0.282039) + (scaled\_liqueur\*-0.382678) + (scaled\_liquor\*-0.350598) + (scaled\_liquor\_\_appetizer\_\*-0.17222) + (scaled\_liver\_loaf\*-0.12337) + (scaled\_long\_li\_fe\_bakery\_product\*-0.216456) + (scaled\_make\_up\_remover\*0.00742406) + (scaled\_male\_cosmetics\*0.376801) + (scaled\_margarine\*-0.253093) + (scaled\_mayonnaise\*-0.13747) + (scaled\_meat\*0.198977) + (scaled\_meat\_spreads\*-0.0627772) + (scaled\_misc\_\_beverages\*-0.0337632) + (scaled\_mustard\*0.00824621) + (scaled\_napkins\*0.226432) + (scaled\_ne\_wspapers\*-0.0232302) + (scaled\_nut\_snack\*-0.237481) + (scaled\_nuts\_div\_prunes\*0.0508019) + (scaled\_oil\*-0.179386) + (scaled\_onions\*0.10927) + (scaled\_organic\_products\*-0.0316136) + (scaled\_organic\_sausage\*0.909983) + (scaled\_other\_vegetables\*0.03029) + (scaled\_packaged\_fruit\_div\_vegetables\*0.210657) + (scaled\_pasta\*-0.245921) + (scaled\_pastr\_y\*0.225728) + (scaled\_pet\_care\*-0.339237) + (scaled\_photo\_div\_film\*-0.257266) + (scaled\_pickled\_vegetables\*-0.120645) + (scaled\_pip\_fruit\*0.0797181) + (scaled\_popcorn\*0.311022) + (scaled\_pork\*0.0544201) + (scaled\_pot\_plants\*-0.156452) + (scaled\_potato\_products\*0.14515) + (scaled\_preservation\_products\*0.693516) + (scaled\_processed\_cheese\*-0.0875785) + (scaled\_prosecco\*-0.265319) + (scaled\_pudding\_powder\*0.210496) + (scaled\_ready\_soups\*-0.404193) + (scaled\_red\_div\_blush\_wine\*-0.130734) + (scaled\_rice\*-0.0511978) + (scaled\_roll\_products\*-0.35775) + (scaled\_rolls\_div\_buns\*1.4885) + (scaled\_root\_vegetables\*0.213596) + (scaled\_rubbing\_alcohol\*-1.78201) + (scaled\_rum\*0.308425) + (scaled\_salad\_dressing\*-0.198009) + (scaled\_salt\*0.0368862) + (scaled\_salty\_snack\*-0.127777) + (scaled\_sauces\*1.17738) + (scaled\_sausage\*-0.297417) + (scaled\_seasonal\_products\*0.0487784) + (scaled\_semi\_res\_finished\_bread\*0.0985332) + (scaled\_shopping\_bags\*-0.507416) + (scaled\_skin\_care\*0.471573) + (scaled\_sliced\_cheese\*0.0340541) + (scaled\_snack\_products\*-0.956654) + (scaled\_soap\*0.456238) + (scaled\_soda\*-0.155858) + (scaled\_soft\_cheese\*0.00760713) + (scaled\_softener\*-0.110787) + (scaled\_sound\_storage\_medium\*-0.312436) + (scaled\_soups\*-0.204382) + (scaled\_sparkling\_wine\*0.318461) + (scaled\_specialty\_bar\*0.0170547) + (scaled\_specialty\_cheese\*-0.298948) + (scaled\_specialty\_chocolate\*-0.230311) + (scaled\_specialty\_fat\*-0.00388135) + (scaled\_specialty\_vegetables\*-0.0928573) + (scaled\_spices\*0.0017404) + (scaled\_spread\_cheese\*0.520335) + (scaled\_sugar\*-0.123175) + (scaled\_sweet\_spreads\*0.59398) + (scaled\_syrup\*-1.22835) + (scaled\_tea\*-0.855995) + (scaled\_tidbits\*0.127019) + (scaled\_toilet\_cleaner\*-0.428411) + (scaled\_tropical\_fruit\*0.113953) + (scaled\_turkey\*0.282224) + (scaled\_UHT\_res\_milk\*0.01825) + (scaled\_vinegar\*1.62121) + (scaled\_waffles\*0.0597998) + (scaled\_whipped\_div\_sour\_cream\*-0.15487) + (scaled\_whisky\*0.529371) + (scaled\_white\_bread\*-0.0873295) + (scaled\_white\_wine\*0.284638) + (scaled\_whole\_milk\*1.41543) + (scaled\_yogurt\*1.71043) + (scaled\_zwieback\*0.422371) );

mapping\_layer\_output\_8 = tanh( -0.606371 + (scaled\_abrasive\_cleaner\*0.183201) + (scaled\_arti\_f\_\_sweetener\*-0.339532) + (scaled\_baby\_cosmetics\*-0.31475) + (scaled\_baby\_food\*1.28466) + (scaled\_bags\*0.137251) + (scaled\_baking\_powder\*-0.0918443) + (scaled\_bathroom\_cleaner\*-0.222226) + (scaled\_beef\*0.0246702) + (scaled\_berries\*-0.201108) + (scaled\_beverages\*0.135646) + (scaled\_bottled\_beer\*0.816863) + (scaled\_bottled\_water\*-0.493151) + (scaled\_brandy\*0.1776) + (scaled\_brown\_bread\*-0.136593) + (scaled\_butter\*0.151261) + (scaled\_butter\_milk\*-0.0039606) + (scaled\_cake\_bar\*0.214445) + (scaled\_candles\*0.103262) + (scaled\_candy\*0.130969) + (scaled\_canned\_beer\*0.671425) + (scaled\_canned\_fish\*-0.187141) + (scaled\_canned\_fruit\*0.657154) + (scaled\_canned\_vegetables\*-0.492032) + (scaled\_cat\_food\*0.157962) + (scaled\_cereals\*-0.676421) + (scaled\_chewing\_gum\*-0.191582) + (scaled\_chicken\*0.339485) + (scaled\_chocolate\*-0.121002) + (scaled\_chocolate\_marshmallow\*-0.262777) + (scaled\_citrus\_fruit\*0.101629) + (scaled\_cleaner\*-0.280595) + (scaled\_cling\_film\_div\_bags\*0.329283) + (scaled\_cocoa\_drinks\*-0.349237) + (scaled\_coffee\*-0.199864) + (scaled\_condensed\_milk\*-0.125621) + (scaled\_cooking\_chocolate\*-0.57604) + (scaled\_cookware\*-0.523892) + (scaled\_cream\*-0.382268) + (scaled\_cream\_cheese\*-0.0351191) + (scaled\_curd\*0.489359) + (scaled\_curd\_cheese\*-0.300367) + (scaled\_decalci\_fier\*0.373038) + (scaled\_dental\_care\*0.0237965) + (scaled\_dessert\*0.170602) + (scaled\_detergent\*-0.0808149) + (scaled\_dish\_cleaner\*-0.203319) + (scaled\_dishes\*0.223142) + (scaled\_dog\_food\*0.433853) + (scaled\_domestic\_eggs\*0.138414) + (scaled\_female\_sanitary\_products\*0.247811) + (scaled\_finished\_products\*-0.0537258) + (scaled\_fish\*-0.691562) + (scaled\_flour\*0.423142) + (scaled\_flower\_\_seeds\_\*-0.56975) + (scaled\_flower\_soil\_div\_fertilizer\*-0.439145) + (scaled\_frankfurter\*-0.0840494) + (scaled\_frozen\_chicken\*-0.060691) + (scaled\_frozen\_dessert\*0.22856) + (scaled\_frozen\_fish\*0.142009) + (scaled\_frozen\_fruits\*0.684832) + (scaled\_frozen\_meals\*0.199599) + (scaled\_frozen\_potato\_products\*-0.235791) + (scaled\_frozen\_vegetables\*0.0932893) + (scaled\_fruit\_div\_vegetable\_juice\*0.228536) + (scaled\_grapes\*0.126598) + (scaled\_hair\_spray\*0.277181) + (scaled\_ham\*-0.0652356) + (scaled\_hamburger\_meat\*0.0146844) + (scaled\_hard\_cheese\*0.0479127) + (scaled\_herbs\*0.326488) + (scaled\_honey\*-0.293174) + (scaled\_house\_keeping\_products\*0.232761) + (scaled\_hygiene\_articles\*0.413367) + (scaled\_ice\_cream\*0.332538) + (scaled\_instant\_coffee\*0.115447) + (scaled\_Instant\_food\_products\*0.971989) + (scaled\_jam\*0.685453) + (scaled\_ketchup\*0.255382) + (scaled\_kitchen\_towels\*-0.142656) + (scaled\_kitchen\_utensil\*-1.13111) + (scaled\_light\_bulbs\*-0.0781934) + (scaled\_liqueur\*0.359553) + (scaled\_liquor\*0.0757334) + (scaled\_liquor\_\_appetizer\_\*-0.445406) + (scaled\_liver\_loaf\*0.0436721) + (scaled\_long\_li\_fe\_bakery\_product\*0.111175) + (scaled\_make\_up\_remover\*-1.6858) + (scaled\_male\_cosmetics\*0.716064) + (scaled\_margarine\*-0.387622) + (scaled\_mayonnaise\*-0.32974) + (scaled\_meat\*0.365282) + (scaled\_meat\_spreads\*0.113728) + (scaled\_misc\_\_beverages\*0.0310915) + (scaled\_mustard\*0.601421) + (scaled\_napkins\*0.084807) + (scaled\_ne\_wspapers\*-0.228639) + (scaled\_nut\_snack\*0.398942) + (scaled\_nuts\_div\_prunes\*0.119218) + (scaled\_oil\*0.508165) + (scaled\_onions\*0.0810588) + (scaled\_organic\_products\*0.0483261) + (scaled\_organic\_sausage\*0.275051) + (scaled\_other\_vegetables\*0.537101) + (scaled\_packaged\_fruit\_div\_vegetables\*0.157139) + (scaled\_pasta\*0.10856) + (scaled\_pastr\_y\*0.0433337) + (scaled\_pet\_care\*0.430149) + (scaled\_photo\_div\_film\*-0.630909) + (scaled\_pickled\_vegetables\*-0.397826) + (scaled\_pip\_fruit\*0.0348714) + (scaled\_popcorn\*-0.164053) + (scaled\_pork\*-0.0603343) + (scaled\_pot\_plants\*-0.126938) + (scaled\_potato\_products\*-0.676589) + (scaled\_preservation\_products\*0.522985) + (scaled\_processed\_cheese\*-0.337108) + (scaled\_prosecco\*0.985684) + (scaled\_pudding\_powder\*-0.166859) + (scaled\_ready\_soups\*-0.298101) + (scaled\_red\_div\_blush\_wine\*0.569441) + (scaled\_rice\*-0.38146) + (scaled\_roll\_products\*0.437687) + (scaled\_rolls\_div\_buns\*-0.854396) + (scaled\_root\_vegetables\*0.698684) + (scaled\_rubbing\_alcohol\*0.102855) + (scaled\_rum\*-1.08084) + (scaled\_salad\_dressing\*-1.13454) + (scaled\_salt\*-0.364587) + (scaled\_salty\_snack\*0.0408784) + (scaled\_sauces\*0.101661) + (scaled\_sausage\*0.0193144) + (scaled\_seasonal\_products\*0.119716) + (scaled\_semi\_res\_finished\_bread\*-0.485635) + (scaled\_shopping\_bags\*-0.0388553) + (scaled\_skin\_care\*-0.129265) + (scaled\_sliced\_cheese\*0.149748) + (scaled\_snack\_products\*-0.239599) + (scaled\_soap\*-0.0796766) + (scaled\_soda\*-0.829015) + (scaled\_soft\_cheese\*-0.152149) + (scaled\_softener\*-0.504864) + (scaled\_sound\_storage\_medium\*0.557874) + (scaled\_soups\*0.477275) + (scaled\_sparkling\_wine\*-0.566036) + (scaled\_specialty\_bar\*-0.202253) + (scaled\_specialty\_cheese\*-0.325142) + (scaled\_specialty\_chocolate\*-0.127578) + (scaled\_specialty\_fat\*-0.0913142) + (scaled\_specialty\_vegetables\*0.139389) + (scaled\_spices\*-0.028393) + (scaled\_spread\_cheese\*0.306753) + (scaled\_sugar\*-0.144634) + (scaled\_sweet\_spreads\*-0.279924) + (scaled\_syrup\*-0.101082) + (scaled\_tea\*1.12865) + (scaled\_tidbits\*-0.785966) + (scaled\_toilet\_cleaner\*0.317335) + (scaled\_tropical\_fruit\*-0.414032) + (scaled\_turkey\*0.108649) + (scaled\_UHT\_res\_milk\*-0.148338) + (scaled\_vinegar\*0.0848196) + (scaled\_waffles\*-0.0467462) + (scaled\_whipped\_div\_sour\_cream\*0.0389192) + (scaled\_whisky\*-0.455665) + (scaled\_white\_bread\*-0.140305) + (scaled\_white\_wine\*-0.327157) + (scaled\_whole\_milk\*0.196456) + (scaled\_yogurt\*-0.651546) + (scaled\_zwieback\*-0.63516) );

mapping\_layer\_output\_9 = tanh( 0.158079 + (scaled\_abrasive\_cleaner\*-0.22406) + (scaled\_arti\_f\_\_sweetener\*-0.114198) + (scaled\_baby\_cosmetics\*-0.588057) + (scaled\_baby\_food\*1.27813) + (scaled\_bags\*-0.0945626) + (scaled\_baking\_powder\*0.187143) + (scaled\_bathroom\_cleaner\*0.617479) + (scaled\_beef\*-0.119031) + (scaled\_berries\*0.0843855) + (scaled\_beverages\*0.24543) + (scaled\_bottled\_beer\*-0.120779) + (scaled\_bottled\_water\*0.00570256) + (scaled\_brandy\*-0.870461) + (scaled\_brown\_bread\*0.0203385) + (scaled\_butter\*-0.0914492) + (scaled\_butter\_milk\*0.224174) + (scaled\_cake\_bar\*0.0990503) + (scaled\_candles\*-0.403468) + (scaled\_candy\*0.222895) + (scaled\_canned\_beer\*0.537446) + (scaled\_canned\_fish\*0.197255) + (scaled\_canned\_fruit\*2.11849) + (scaled\_canned\_vegetables\*0.112453) + (scaled\_cat\_food\*-0.0250952) + (scaled\_cereals\*-0.103463) + (scaled\_chewing\_gum\*0.0303086) + (scaled\_chicken\*-0.186488) + (scaled\_chocolate\*-0.246832) + (scaled\_chocolate\_marshmallow\*0.111604) + (scaled\_citrus\_fruit\*0.428463) + (scaled\_cleaner\*0.286058) + (scaled\_cling\_film\_div\_bags\*-0.0970993) + (scaled\_cocoa\_drinks\*0.323498) + (scaled\_coffee\*-0.0223892) + (scaled\_condensed\_milk\*0.235656) + (scaled\_cooking\_chocolate\*0.930014) + (scaled\_cookware\*0.363839) + (scaled\_cream\*-0.0863184) + (scaled\_cream\_cheese\*-0.20495) + (scaled\_curd\*0.120676) + (scaled\_curd\_cheese\*-0.220404) + (scaled\_decalci\_fier\*-0.219472) + (scaled\_dental\_care\*0.0181397) + (scaled\_dessert\*0.0229634) + (scaled\_detergent\*0.104662) + (scaled\_dish\_cleaner\*0.18969) + (scaled\_dishes\*0.124405) + (scaled\_dog\_food\*0.103391) + (scaled\_domestic\_eggs\*-0.0886733) + (scaled\_female\_sanitary\_products\*-0.313931) + (scaled\_finished\_products\*0.465626) + (scaled\_fish\*-0.297238) + (scaled\_flour\*0.0100241) + (scaled\_flower\_\_seeds\_\*0.16534) + (scaled\_flower\_soil\_div\_fertilizer\*-0.660071) + (scaled\_frankfurter\*-0.330644) + (scaled\_frozen\_chicken\*0.113303) + (scaled\_frozen\_dessert\*-0.193472) + (scaled\_frozen\_fish\*-0.25166) + (scaled\_frozen\_fruits\*0.769257) + (scaled\_frozen\_meals\*-0.0262698) + (scaled\_frozen\_potato\_products\*0.243982) + (scaled\_frozen\_vegetables\*0.116647) + (scaled\_fruit\_div\_vegetable\_juice\*-0.222233) + (scaled\_grapes\*-0.164607) + (scaled\_hair\_spray\*-0.342392) + (scaled\_ham\*-0.0437241) + (scaled\_hamburger\_meat\*0.296957) + (scaled\_hard\_cheese\*0.149216) + (scaled\_herbs\*-0.160462) + (scaled\_honey\*0.219129) + (scaled\_house\_keeping\_products\*-0.113887) + (scaled\_hygiene\_articles\*-0.0371199) + (scaled\_ice\_cream\*0.893829) + (scaled\_instant\_coffee\*0.761163) + (scaled\_Instant\_food\_products\*0.299338) + (scaled\_jam\*0.559288) + (scaled\_ketchup\*0.473651) + (scaled\_kitchen\_towels\*-0.475881) + (scaled\_kitchen\_utensil\*1.21929) + (scaled\_light\_bulbs\*-0.388752) + (scaled\_liqueur\*-1.25576) + (scaled\_liquor\*-0.160654) + (scaled\_liquor\_\_appetizer\_\*-0.443937) + (scaled\_liver\_loaf\*-0.0629143) + (scaled\_long\_li\_fe\_bakery\_product\*-0.076749) + (scaled\_make\_up\_remover\*-2.20898) + (scaled\_male\_cosmetics\*0.455276) + (scaled\_margarine\*0.061416) + (scaled\_mayonnaise\*-0.0935848) + (scaled\_meat\*-0.0265984) + (scaled\_meat\_spreads\*0.0334447) + (scaled\_misc\_\_beverages\*0.631069) + (scaled\_mustard\*0.066261) + (scaled\_napkins\*-0.0721599) + (scaled\_ne\_wspapers\*-0.0152771) + (scaled\_nut\_snack\*-0.666838) + (scaled\_nuts\_div\_prunes\*-0.0719778) + (scaled\_oil\*0.0627913) + (scaled\_onions\*0.0736747) + (scaled\_organic\_products\*0.312716) + (scaled\_organic\_sausage\*-0.00866449) + (scaled\_other\_vegetables\*-0.0214582) + (scaled\_packaged\_fruit\_div\_vegetables\*0.20553) + (scaled\_pasta\*0.438724) + (scaled\_pastr\_y\*0.0166835) + (scaled\_pet\_care\*0.127772) + (scaled\_photo\_div\_film\*-0.573777) + (scaled\_pickled\_vegetables\*0.108285) + (scaled\_pip\_fruit\*0.140047) + (scaled\_popcorn\*0.990313) + (scaled\_pork\*-0.181534) + (scaled\_pot\_plants\*-0.106388) + (scaled\_potato\_products\*0.375666) + (scaled\_preservation\_products\*1.3542) + (scaled\_processed\_cheese\*-0.139896) + (scaled\_prosecco\*-1.214) + (scaled\_pudding\_powder\*0.772212) + (scaled\_ready\_soups\*-0.141943) + (scaled\_red\_div\_blush\_wine\*-0.495684) + (scaled\_rice\*-0.260433) + (scaled\_roll\_products\*-0.814083) + (scaled\_rolls\_div\_buns\*-0.0850902) + (scaled\_root\_vegetables\*0.996863) + (scaled\_rubbing\_alcohol\*1.47533) + (scaled\_rum\*-0.362069) + (scaled\_salad\_dressing\*-1.75097) + (scaled\_salt\*-0.198714) + (scaled\_salty\_snack\*-0.225518) + (scaled\_sauces\*-0.189153) + (scaled\_sausage\*0.0558684) + (scaled\_seasonal\_products\*0.107612) + (scaled\_semi\_res\_finished\_bread\*-0.648445) + (scaled\_shopping\_bags\*0.239379) + (scaled\_skin\_care\*-0.0196258) + (scaled\_sliced\_cheese\*0.177064) + (scaled\_snack\_products\*0.875247) + (scaled\_soap\*-0.0585646) + (scaled\_soda\*-0.767662) + (scaled\_soft\_cheese\*0.205621) + (scaled\_softener\*0.272913) + (scaled\_sound\_storage\_medium\*-0.997206) + (scaled\_soups\*-0.0587595) + (scaled\_sparkling\_wine\*-0.180564) + (scaled\_specialty\_bar\*-0.233091) + (scaled\_specialty\_cheese\*0.0928249) + (scaled\_specialty\_chocolate\*0.0311838) + (scaled\_specialty\_fat\*-0.128726) + (scaled\_specialty\_vegetables\*-0.754213) + (scaled\_spices\*-0.276358) + (scaled\_spread\_cheese\*-0.326907) + (scaled\_sugar\*-0.0231402) + (scaled\_sweet\_spreads\*-0.0773298) + (scaled\_syrup\*0.362687) + (scaled\_tea\*1.50998) + (scaled\_tidbits\*-1.03818) + (scaled\_toilet\_cleaner\*0.571712) + (scaled\_tropical\_fruit\*0.00204576) + (scaled\_turkey\*-0.341279) + (scaled\_UHT\_res\_milk\*0.0135967) + (scaled\_vinegar\*0.276871) + (scaled\_waffles\*-0.214071) + (scaled\_whipped\_div\_sour\_cream\*-0.161884) + (scaled\_whisky\*-0.764762) + (scaled\_white\_bread\*0.0480037) + (scaled\_white\_wine\*0.169744) + (scaled\_whole\_milk\*1.64852) + (scaled\_yogurt\*0.111459) + (scaled\_zwieback\*0.193849) );

mapping\_layer\_output\_10 = tanh( 0.0437665 + (scaled\_abrasive\_cleaner\*0.282601) + (scaled\_arti\_f\_\_sweetener\*-0.211037) + (scaled\_baby\_cosmetics\*-0.145479) + (scaled\_baby\_food\*-0.0276565) + (scaled\_bags\*-0.0672125) + (scaled\_baking\_powder\*-0.096983) + (scaled\_bathroom\_cleaner\*0.278509) + (scaled\_beef\*-0.0123952) + (scaled\_berries\*0.116161) + (scaled\_beverages\*0.0772976) + (scaled\_bottled\_beer\*-0.304077) + (scaled\_bottled\_water\*-0.0704448) + (scaled\_brandy\*-0.28309) + (scaled\_brown\_bread\*-0.083356) + (scaled\_butter\*-0.171651) + (scaled\_butter\_milk\*-0.148908) + (scaled\_cake\_bar\*-0.115) + (scaled\_candles\*0.203036) + (scaled\_candy\*0.0963771) + (scaled\_canned\_beer\*0.62331) + (scaled\_canned\_fish\*-0.158079) + (scaled\_canned\_fruit\*0.391281) + (scaled\_canned\_vegetables\*0.253457) + (scaled\_cat\_food\*0.0263143) + (scaled\_cereals\*-0.121963) + (scaled\_chewing\_gum\*0.0245354) + (scaled\_chicken\*-0.0751361) + (scaled\_chocolate\*-0.115513) + (scaled\_chocolate\_marshmallow\*0.171258) + (scaled\_citrus\_fruit\*0.00671678) + (scaled\_cleaner\*0.514896) + (scaled\_cling\_film\_div\_bags\*-0.268843) + (scaled\_cocoa\_drinks\*-0.142773) + (scaled\_coffee\*-0.113407) + (scaled\_condensed\_milk\*-0.256977) + (scaled\_cooking\_chocolate\*0.0453342) + (scaled\_cookware\*0.363568) + (scaled\_cream\*-0.646254) + (scaled\_cream\_cheese\*-0.0265792) + (scaled\_curd\*-0.125358) + (scaled\_curd\_cheese\*0.3941) + (scaled\_decalci\_fier\*-1.02626) + (scaled\_dental\_care\*-0.035738) + (scaled\_dessert\*0.294878) + (scaled\_detergent\*-0.32) + (scaled\_dish\_cleaner\*-0.497209) + (scaled\_dishes\*-0.226109) + (scaled\_dog\_food\*0.28208) + (scaled\_domestic\_eggs\*-0.167103) + (scaled\_female\_sanitary\_products\*0.0338762) + (scaled\_finished\_products\*-0.26656) + (scaled\_fish\*-0.313435) + (scaled\_flour\*-0.0938449) + (scaled\_flower\_\_seeds\_\*-0.190645) + (scaled\_flower\_soil\_div\_fertilizer\*-0.576624) + (scaled\_frankfurter\*-0.236644) + (scaled\_frozen\_chicken\*-0.869221) + (scaled\_frozen\_dessert\*-0.0295637) + (scaled\_frozen\_fish\*0.355711) + (scaled\_frozen\_fruits\*0.538515) + (scaled\_frozen\_meals\*0.252548) + (scaled\_frozen\_potato\_products\*0.451802) + (scaled\_frozen\_vegetables\*-0.0774068) + (scaled\_fruit\_div\_vegetable\_juice\*-0.0347791) + (scaled\_grapes\*-0.023384) + (scaled\_hair\_spray\*0.229876) + (scaled\_ham\*-0.0545795) + (scaled\_hamburger\_meat\*-0.236719) + (scaled\_hard\_cheese\*-0.153183) + (scaled\_herbs\*0.0652995) + (scaled\_honey\*0.166622) + (scaled\_house\_keeping\_products\*0.576194) + (scaled\_hygiene\_articles\*-0.17862) + (scaled\_ice\_cream\*0.452115) + (scaled\_instant\_coffee\*0.196543) + (scaled\_Instant\_food\_products\*0.972796) + (scaled\_jam\*0.000324675) + (scaled\_ketchup\*0.226074) + (scaled\_kitchen\_towels\*0.0181658) + (scaled\_kitchen\_utensil\*0.304163) + (scaled\_light\_bulbs\*0.0267256) + (scaled\_liqueur\*-1.11724) + (scaled\_liquor\*0.0585926) + (scaled\_liquor\_\_appetizer\_\*-0.105332) + (scaled\_liver\_loaf\*-0.0900529) + (scaled\_long\_li\_fe\_bakery\_product\*-0.025742) + (scaled\_make\_up\_remover\*0.276039) + (scaled\_male\_cosmetics\*-0.138979) + (scaled\_margarine\*-0.106805) + (scaled\_mayonnaise\*0.341718) + (scaled\_meat\*0.113725) + (scaled\_meat\_spreads\*0.324944) + (scaled\_misc\_\_beverages\*-0.19623) + (scaled\_mustard\*0.0369882) + (scaled\_napkins\*-0.0215746) + (scaled\_ne\_wspapers\*-0.113981) + (scaled\_nut\_snack\*0.69716) + (scaled\_nuts\_div\_prunes\*0.418582) + (scaled\_oil\*-0.0846324) + (scaled\_onions\*-0.0722547) + (scaled\_organic\_products\*0.331087) + (scaled\_organic\_sausage\*0.51712) + (scaled\_other\_vegetables\*-0.298738) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.305613) + (scaled\_pasta\*0.196054) + (scaled\_pastr\_y\*-0.181157) + (scaled\_pet\_care\*-0.190748) + (scaled\_photo\_div\_film\*-0.606897) + (scaled\_pickled\_vegetables\*0.0986186) + (scaled\_pip\_fruit\*-0.0443655) + (scaled\_popcorn\*0.677593) + (scaled\_pork\*0.0270323) + (scaled\_pot\_plants\*-0.237205) + (scaled\_potato\_products\*-0.222903) + (scaled\_preservation\_products\*0.385103) + (scaled\_processed\_cheese\*0.213298) + (scaled\_prosecco\*0.251322) + (scaled\_pudding\_powder\*-0.465153) + (scaled\_ready\_soups\*-0.180559) + (scaled\_red\_div\_blush\_wine\*0.00592155) + (scaled\_rice\*-0.0401064) + (scaled\_roll\_products\*0.0651937) + (scaled\_rolls\_div\_buns\*-1.46733) + (scaled\_root\_vegetables\*-0.227774) + (scaled\_rubbing\_alcohol\*-0.278241) + (scaled\_rum\*-0.595383) + (scaled\_salad\_dressing\*-0.702509) + (scaled\_salt\*0.47813) + (scaled\_salty\_snack\*-0.0962007) + (scaled\_sauces\*0.318573) + (scaled\_sausage\*-0.267316) + (scaled\_seasonal\_products\*0.240187) + (scaled\_semi\_res\_finished\_bread\*-0.195005) + (scaled\_shopping\_bags\*-0.0799654) + (scaled\_skin\_care\*0.702674) + (scaled\_sliced\_cheese\*0.159526) + (scaled\_snack\_products\*0.0338592) + (scaled\_soap\*-0.91896) + (scaled\_soda\*-0.0212274) + (scaled\_soft\_cheese\*0.224351) + (scaled\_softener\*0.039227) + (scaled\_sound\_storage\_medium\*-0.948992) + (scaled\_soups\*-0.348321) + (scaled\_sparkling\_wine\*-0.335226) + (scaled\_specialty\_bar\*-0.315375) + (scaled\_specialty\_cheese\*-0.19988) + (scaled\_specialty\_chocolate\*-0.119135) + (scaled\_specialty\_fat\*0.307556) + (scaled\_specialty\_vegetables\*-0.414401) + (scaled\_spices\*0.332282) + (scaled\_spread\_cheese\*0.159564) + (scaled\_sugar\*0.116378) + (scaled\_sweet\_spreads\*-0.0464944) + (scaled\_syrup\*0.302759) + (scaled\_tea\*0.543108) + (scaled\_tidbits\*-0.263706) + (scaled\_toilet\_cleaner\*-0.0646089) + (scaled\_tropical\_fruit\*-0.473501) + (scaled\_turkey\*-0.0905828) + (scaled\_UHT\_res\_milk\*-0.0199961) + (scaled\_vinegar\*0.343973) + (scaled\_waffles\*0.0598767) + (scaled\_whipped\_div\_sour\_cream\*-0.620642) + (scaled\_whisky\*0.587917) + (scaled\_white\_bread\*-0.15115) + (scaled\_white\_wine\*-0.202871) + (scaled\_whole\_milk\*0.171496) + (scaled\_yogurt\*-0.457593) + (scaled\_zwieback\*0.328399) );

mapping\_layer\_output\_11 = tanh( 0.0423836 + (scaled\_abrasive\_cleaner\*0.686758) + (scaled\_arti\_f\_\_sweetener\*0.498082) + (scaled\_baby\_cosmetics\*1.13189) + (scaled\_baby\_food\*0.479444) + (scaled\_bags\*-0.068144) + (scaled\_baking\_powder\*0.169763) + (scaled\_bathroom\_cleaner\*0.414137) + (scaled\_beef\*0.128052) + (scaled\_berries\*-0.04501) + (scaled\_beverages\*-0.103408) + (scaled\_bottled\_beer\*0.803431) + (scaled\_bottled\_water\*-0.419117) + (scaled\_brandy\*0.365863) + (scaled\_brown\_bread\*0.0574634) + (scaled\_butter\*0.0484453) + (scaled\_butter\_milk\*0.108465) + (scaled\_cake\_bar\*0.0818945) + (scaled\_candles\*-0.352392) + (scaled\_candy\*-0.157269) + (scaled\_canned\_beer\*-0.243923) + (scaled\_canned\_fish\*0.0618262) + (scaled\_canned\_fruit\*-0.663977) + (scaled\_canned\_vegetables\*-0.0384779) + (scaled\_cat\_food\*0.182444) + (scaled\_cereals\*-0.607497) + (scaled\_chewing\_gum\*-0.0498271) + (scaled\_chicken\*-0.115123) + (scaled\_chocolate\*0.144644) + (scaled\_chocolate\_marshmallow\*0.0910167) + (scaled\_citrus\_fruit\*0.0962706) + (scaled\_cleaner\*-0.0820348) + (scaled\_cling\_film\_div\_bags\*0.161882) + (scaled\_cocoa\_drinks\*-0.0697567) + (scaled\_coffee\*0.057066) + (scaled\_condensed\_milk\*-0.0889862) + (scaled\_cooking\_chocolate\*-0.368778) + (scaled\_cookware\*-0.435209) + (scaled\_cream\*-1.21705) + (scaled\_cream\_cheese\*0.0856157) + (scaled\_curd\*0.03159) + (scaled\_curd\_cheese\*0.0516964) + (scaled\_decalci\_fier\*-0.109721) + (scaled\_dental\_care\*0.0260027) + (scaled\_dessert\*-0.0904885) + (scaled\_detergent\*0.0917071) + (scaled\_dish\_cleaner\*-0.124373) + (scaled\_dishes\*0.0434171) + (scaled\_dog\_food\*0.0129181) + (scaled\_domestic\_eggs\*0.255574) + (scaled\_female\_sanitary\_products\*-0.492826) + (scaled\_finished\_products\*0.191138) + (scaled\_fish\*0.138657) + (scaled\_flour\*-0.11369) + (scaled\_flower\_\_seeds\_\*0.353671) + (scaled\_flower\_soil\_div\_fertilizer\*0.523851) + (scaled\_frankfurter\*0.158605) + (scaled\_frozen\_chicken\*-0.355502) + (scaled\_frozen\_dessert\*0.458816) + (scaled\_frozen\_fish\*0.222487) + (scaled\_frozen\_fruits\*-0.336354) + (scaled\_frozen\_meals\*-0.0681619) + (scaled\_frozen\_potato\_products\*0.00248852) + (scaled\_frozen\_vegetables\*-0.0455957) + (scaled\_fruit\_div\_vegetable\_juice\*0.180855) + (scaled\_grapes\*-0.110015) + (scaled\_hair\_spray\*0.227795) + (scaled\_ham\*-0.579485) + (scaled\_hamburger\_meat\*0.264339) + (scaled\_hard\_cheese\*0.110196) + (scaled\_herbs\*0.100077) + (scaled\_honey\*1.66305) + (scaled\_house\_keeping\_products\*0.370131) + (scaled\_hygiene\_articles\*-0.352406) + (scaled\_ice\_cream\*0.131721) + (scaled\_instant\_coffee\*-0.00820765) + (scaled\_Instant\_food\_products\*-0.318044) + (scaled\_jam\*0.0435189) + (scaled\_ketchup\*-0.204168) + (scaled\_kitchen\_towels\*0.190444) + (scaled\_kitchen\_utensil\*-0.423065) + (scaled\_light\_bulbs\*-0.120138) + (scaled\_liqueur\*-0.437378) + (scaled\_liquor\*0.480383) + (scaled\_liquor\_\_appetizer\_\*-0.269266) + (scaled\_liver\_loaf\*0.746991) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0288766) + (scaled\_make\_up\_remover\*-0.612592) + (scaled\_male\_cosmetics\*0.171193) + (scaled\_margarine\*-0.25664) + (scaled\_mayonnaise\*-0.205467) + (scaled\_meat\*-0.0561086) + (scaled\_meat\_spreads\*-0.259899) + (scaled\_misc\_\_beverages\*0.109618) + (scaled\_mustard\*-0.103558) + (scaled\_napkins\*-0.107747) + (scaled\_ne\_wspapers\*0.0542229) + (scaled\_nut\_snack\*0.119499) + (scaled\_nuts\_div\_prunes\*0.607084) + (scaled\_oil\*0.173056) + (scaled\_onions\*-0.176376) + (scaled\_organic\_products\*-0.158037) + (scaled\_organic\_sausage\*0.924559) + (scaled\_other\_vegetables\*1.27343) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.14177) + (scaled\_pasta\*-0.0427128) + (scaled\_pastr\_y\*-0.0785632) + (scaled\_pet\_care\*0.365718) + (scaled\_photo\_div\_film\*0.493606) + (scaled\_pickled\_vegetables\*-0.396419) + (scaled\_pip\_fruit\*-0.0723723) + (scaled\_popcorn\*0.150974) + (scaled\_pork\*0.252277) + (scaled\_pot\_plants\*0.14048) + (scaled\_potato\_products\*-0.553907) + (scaled\_preservation\_products\*1.67965) + (scaled\_processed\_cheese\*0.0891721) + (scaled\_prosecco\*-0.125708) + (scaled\_pudding\_powder\*-1.20869) + (scaled\_ready\_soups\*0.913727) + (scaled\_red\_div\_blush\_wine\*0.0687724) + (scaled\_rice\*0.399007) + (scaled\_roll\_products\*0.249034) + (scaled\_rolls\_div\_buns\*-0.626121) + (scaled\_root\_vegetables\*0.452901) + (scaled\_rubbing\_alcohol\*0.483523) + (scaled\_rum\*-0.477592) + (scaled\_salad\_dressing\*-1.05621) + (scaled\_salt\*-0.208926) + (scaled\_salty\_snack\*0.155262) + (scaled\_sauces\*0.217233) + (scaled\_sausage\*-0.0524864) + (scaled\_seasonal\_products\*-0.099607) + (scaled\_semi\_res\_finished\_bread\*-0.182812) + (scaled\_shopping\_bags\*0.211952) + (scaled\_skin\_care\*0.202597) + (scaled\_sliced\_cheese\*0.375856) + (scaled\_snack\_products\*-0.236104) + (scaled\_soap\*-0.980011) + (scaled\_soda\*-2.50671) + (scaled\_soft\_cheese\*0.0952111) + (scaled\_softener\*-0.650199) + (scaled\_sound\_storage\_medium\*-1.1065) + (scaled\_soups\*0.238111) + (scaled\_sparkling\_wine\*-0.219584) + (scaled\_specialty\_bar\*-0.21265) + (scaled\_specialty\_cheese\*-0.139537) + (scaled\_specialty\_chocolate\*-0.155447) + (scaled\_specialty\_fat\*0.680206) + (scaled\_specialty\_vegetables\*2.2866) + (scaled\_spices\*0.692593) + (scaled\_spread\_cheese\*0.0972484) + (scaled\_sugar\*0.334308) + (scaled\_sweet\_spreads\*-0.36159) + (scaled\_syrup\*-0.225415) + (scaled\_tea\*-0.616485) + (scaled\_tidbits\*-1.40776) + (scaled\_toilet\_cleaner\*-0.37487) + (scaled\_tropical\_fruit\*-0.106781) + (scaled\_turkey\*-0.0693822) + (scaled\_UHT\_res\_milk\*-0.143478) + (scaled\_vinegar\*0.0442384) + (scaled\_waffles\*0.160235) + (scaled\_whipped\_div\_sour\_cream\*0.622514) + (scaled\_whisky\*-0.377631) + (scaled\_white\_bread\*-0.0489821) + (scaled\_white\_wine\*-0.195174) + (scaled\_whole\_milk\*1.23202) + (scaled\_yogurt\*-0.0106556) + (scaled\_zwieback\*0.294809) );

mapping\_layer\_output\_12 = tanh( -0.301328 + (scaled\_abrasive\_cleaner\*0.11289) + (scaled\_arti\_f\_\_sweetener\*0.064634) + (scaled\_baby\_cosmetics\*0.206485) + (scaled\_baby\_food\*0.369764) + (scaled\_bags\*0.169895) + (scaled\_baking\_powder\*-0.254525) + (scaled\_bathroom\_cleaner\*-0.485111) + (scaled\_beef\*0.228151) + (scaled\_berries\*0.154944) + (scaled\_beverages\*0.0279364) + (scaled\_bottled\_beer\*-0.0819202) + (scaled\_bottled\_water\*0.186153) + (scaled\_brandy\*0.589241) + (scaled\_brown\_bread\*-0.00921156) + (scaled\_butter\*0.172643) + (scaled\_butter\_milk\*0.0925029) + (scaled\_cake\_bar\*-0.145297) + (scaled\_candles\*-0.261245) + (scaled\_candy\*0.1483) + (scaled\_canned\_beer\*0.220606) + (scaled\_canned\_fish\*0.0996574) + (scaled\_canned\_fruit\*-0.0272217) + (scaled\_canned\_vegetables\*-0.263342) + (scaled\_cat\_food\*0.0212277) + (scaled\_cereals\*-0.206679) + (scaled\_chewing\_gum\*0.0518362) + (scaled\_chicken\*-0.0408508) + (scaled\_chocolate\*-0.0775812) + (scaled\_chocolate\_marshmallow\*-0.44485) + (scaled\_citrus\_fruit\*0.500119) + (scaled\_cleaner\*0.271318) + (scaled\_cling\_film\_div\_bags\*-0.0488515) + (scaled\_cocoa\_drinks\*-0.748269) + (scaled\_coffee\*0.23699) + (scaled\_condensed\_milk\*-0.567811) + (scaled\_cooking\_chocolate\*-0.389692) + (scaled\_cookware\*0.863905) + (scaled\_cream\*1.33923) + (scaled\_cream\_cheese\*0.291845) + (scaled\_curd\*0.466377) + (scaled\_curd\_cheese\*1.0307) + (scaled\_decalci\_fier\*0.293964) + (scaled\_dental\_care\*-0.606797) + (scaled\_dessert\*-0.00814541) + (scaled\_detergent\*-0.425676) + (scaled\_dish\_cleaner\*-0.062371) + (scaled\_dishes\*-0.24529) + (scaled\_dog\_food\*0.103946) + (scaled\_domestic\_eggs\*0.0391583) + (scaled\_female\_sanitary\_products\*-0.225016) + (scaled\_finished\_products\*0.229228) + (scaled\_fish\*-0.286481) + (scaled\_flour\*0.0907767) + (scaled\_flower\_\_seeds\_\*0.0410053) + (scaled\_flower\_soil\_div\_fertilizer\*-0.403671) + (scaled\_frankfurter\*-0.0227381) + (scaled\_frozen\_chicken\*0.733888) + (scaled\_frozen\_dessert\*0.0183798) + (scaled\_frozen\_fish\*0.130971) + (scaled\_frozen\_fruits\*-0.497957) + (scaled\_frozen\_meals\*0.26426) + (scaled\_frozen\_potato\_products\*-0.248739) + (scaled\_frozen\_vegetables\*0.00105847) + (scaled\_fruit\_div\_vegetable\_juice\*0.205593) + (scaled\_grapes\*-0.0740736) + (scaled\_hair\_spray\*0.891387) + (scaled\_ham\*0.0624083) + (scaled\_hamburger\_meat\*0.222381) + (scaled\_hard\_cheese\*-0.00810769) + (scaled\_herbs\*0.10368) + (scaled\_honey\*0.334387) + (scaled\_house\_keeping\_products\*-0.171299) + (scaled\_hygiene\_articles\*0.0855689) + (scaled\_ice\_cream\*-0.313123) + (scaled\_instant\_coffee\*0.0881834) + (scaled\_Instant\_food\_products\*0.243966) + (scaled\_jam\*0.192011) + (scaled\_ketchup\*-0.0335569) + (scaled\_kitchen\_towels\*0.245132) + (scaled\_kitchen\_utensil\*0.341609) + (scaled\_light\_bulbs\*0.128536) + (scaled\_liqueur\*1.1674) + (scaled\_liquor\*0.354861) + (scaled\_liquor\_\_appetizer\_\*-0.0171419) + (scaled\_liver\_loaf\*0.292937) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0636565) + (scaled\_make\_up\_remover\*-0.405703) + (scaled\_male\_cosmetics\*0.152898) + (scaled\_margarine\*-0.104598) + (scaled\_mayonnaise\*0.51277) + (scaled\_meat\*-0.0522953) + (scaled\_meat\_spreads\*-1.02144) + (scaled\_misc\_\_beverages\*0.255638) + (scaled\_mustard\*-0.655649) + (scaled\_napkins\*-0.0532361) + (scaled\_ne\_wspapers\*-0.0571008) + (scaled\_nut\_snack\*-0.54099) + (scaled\_nuts\_div\_prunes\*-0.164169) + (scaled\_oil\*0.506878) + (scaled\_onions\*-0.0752657) + (scaled\_organic\_products\*0.547049) + (scaled\_organic\_sausage\*-0.235685) + (scaled\_other\_vegetables\*-0.226042) + (scaled\_packaged\_fruit\_div\_vegetables\*0.00732366) + (scaled\_pasta\*-0.199761) + (scaled\_pastr\_y\*-0.291837) + (scaled\_pet\_care\*0.538695) + (scaled\_photo\_div\_film\*-0.244274) + (scaled\_pickled\_vegetables\*-0.15562) + (scaled\_pip\_fruit\*0.222239) + (scaled\_popcorn\*-0.133144) + (scaled\_pork\*0.121506) + (scaled\_pot\_plants\*-0.208671) + (scaled\_potato\_products\*-0.381746) + (scaled\_preservation\_products\*-1.00407) + (scaled\_processed\_cheese\*0.011233) + (scaled\_prosecco\*-0.0402334) + (scaled\_pudding\_powder\*0.96149) + (scaled\_ready\_soups\*-0.360062) + (scaled\_red\_div\_blush\_wine\*0.276484) + (scaled\_rice\*-0.711818) + (scaled\_roll\_products\*-0.0322305) + (scaled\_rolls\_div\_buns\*0.798365) + (scaled\_root\_vegetables\*0.166827) + (scaled\_rubbing\_alcohol\*0.167353) + (scaled\_rum\*0.201918) + (scaled\_salad\_dressing\*-0.212749) + (scaled\_salt\*-0.091647) + (scaled\_salty\_snack\*-0.0336917) + (scaled\_sauces\*-0.0427608) + (scaled\_sausage\*-0.0504551) + (scaled\_seasonal\_products\*-0.0887174) + (scaled\_semi\_res\_finished\_bread\*-0.022119) + (scaled\_shopping\_bags\*0.275041) + (scaled\_skin\_care\*0.0819422) + (scaled\_sliced\_cheese\*0.0726495) + (scaled\_snack\_products\*0.281278) + (scaled\_soap\*-0.657737) + (scaled\_soda\*1.25265) + (scaled\_soft\_cheese\*-0.0220758) + (scaled\_softener\*-0.156502) + (scaled\_sound\_storage\_medium\*1.25073) + (scaled\_soups\*0.310374) + (scaled\_sparkling\_wine\*-0.0085555) + (scaled\_specialty\_bar\*-0.205893) + (scaled\_specialty\_cheese\*0.279446) + (scaled\_specialty\_chocolate\*-0.245208) + (scaled\_specialty\_fat\*-0.136906) + (scaled\_specialty\_vegetables\*0.43251) + (scaled\_spices\*0.070604) + (scaled\_spread\_cheese\*-0.294791) + (scaled\_sugar\*0.290411) + (scaled\_sweet\_spreads\*-0.251422) + (scaled\_syrup\*0.317854) + (scaled\_tea\*0.204831) + (scaled\_tidbits\*-0.710611) + (scaled\_toilet\_cleaner\*-0.75237) + (scaled\_tropical\_fruit\*0.53666) + (scaled\_turkey\*0.0504218) + (scaled\_UHT\_res\_milk\*0.0748251) + (scaled\_vinegar\*0.442879) + (scaled\_waffles\*-0.167828) + (scaled\_whipped\_div\_sour\_cream\*0.207192) + (scaled\_whisky\*0.00620546) + (scaled\_white\_bread\*-0.205899) + (scaled\_white\_wine\*-0.132295) + (scaled\_whole\_milk\*0.450628) + (scaled\_yogurt\*0.484746) + (scaled\_zwieback\*-0.364047) );

mapping\_layer\_output\_13 = tanh( 0.567886 + (scaled\_abrasive\_cleaner\*0.20867) + (scaled\_arti\_f\_\_sweetener\*0.754452) + (scaled\_baby\_cosmetics\*-0.195324) + (scaled\_baby\_food\*-1.20141) + (scaled\_bags\*-0.0857756) + (scaled\_baking\_powder\*0.21693) + (scaled\_bathroom\_cleaner\*-0.443818) + (scaled\_beef\*0.0351335) + (scaled\_berries\*0.0390493) + (scaled\_beverages\*-0.0495808) + (scaled\_bottled\_beer\*0.181204) + (scaled\_bottled\_water\*-0.0460799) + (scaled\_brandy\*0.349674) + (scaled\_brown\_bread\*0.00437651) + (scaled\_butter\*-0.199786) + (scaled\_butter\_milk\*0.146093) + (scaled\_cake\_bar\*-0.0439768) + (scaled\_candles\*-0.0522285) + (scaled\_candy\*0.103688) + (scaled\_canned\_beer\*-0.24347) + (scaled\_canned\_fish\*0.290943) + (scaled\_canned\_fruit\*-0.243052) + (scaled\_canned\_vegetables\*-0.124433) + (scaled\_cat\_food\*-0.00873056) + (scaled\_cereals\*0.273132) + (scaled\_chewing\_gum\*-0.0572285) + (scaled\_chicken\*-0.0764627) + (scaled\_chocolate\*-0.0283666) + (scaled\_chocolate\_marshmallow\*-0.428241) + (scaled\_citrus\_fruit\*0.196539) + (scaled\_cleaner\*0.131096) + (scaled\_cling\_film\_div\_bags\*-0.0234837) + (scaled\_cocoa\_drinks\*-0.258646) + (scaled\_coffee\*0.17368) + (scaled\_condensed\_milk\*0.047084) + (scaled\_cooking\_chocolate\*-0.00821691) + (scaled\_cookware\*0.0505657) + (scaled\_cream\*0.246324) + (scaled\_cream\_cheese\*0.0412844) + (scaled\_curd\*-0.0108492) + (scaled\_curd\_cheese\*-0.140163) + (scaled\_decalci\_fier\*-0.191848) + (scaled\_dental\_care\*-0.0743913) + (scaled\_dessert\*-0.0304284) + (scaled\_detergent\*0.0117757) + (scaled\_dish\_cleaner\*0.00671642) + (scaled\_dishes\*0.0600813) + (scaled\_dog\_food\*-0.175857) + (scaled\_domestic\_eggs\*-0.16637) + (scaled\_female\_sanitary\_products\*0.17731) + (scaled\_finished\_products\*0.570482) + (scaled\_fish\*0.112308) + (scaled\_flour\*-0.387534) + (scaled\_flower\_\_seeds\_\*-0.148997) + (scaled\_flower\_soil\_div\_fertilizer\*-0.00346324) + (scaled\_frankfurter\*0.0484842) + (scaled\_frozen\_chicken\*0.0587693) + (scaled\_frozen\_dessert\*0.146832) + (scaled\_frozen\_fish\*-0.230169) + (scaled\_frozen\_fruits\*-0.280028) + (scaled\_frozen\_meals\*-0.183695) + (scaled\_frozen\_potato\_products\*-0.808084) + (scaled\_frozen\_vegetables\*0.112587) + (scaled\_fruit\_div\_vegetable\_juice\*-0.114423) + (scaled\_grapes\*-0.018713) + (scaled\_hair\_spray\*-0.129777) + (scaled\_ham\*-0.0241668) + (scaled\_hamburger\_meat\*0.140416) + (scaled\_hard\_cheese\*0.115039) + (scaled\_herbs\*-0.0034782) + (scaled\_honey\*0.0468309) + (scaled\_house\_keeping\_products\*-0.293536) + (scaled\_hygiene\_articles\*0.0617992) + (scaled\_ice\_cream\*-0.0157511) + (scaled\_instant\_coffee\*-0.128489) + (scaled\_Instant\_food\_products\*-0.113417) + (scaled\_jam\*0.0301468) + (scaled\_ketchup\*0.436706) + (scaled\_kitchen\_towels\*0.0958628) + (scaled\_kitchen\_utensil\*-0.329643) + (scaled\_light\_bulbs\*0.134387) + (scaled\_liqueur\*0.0740183) + (scaled\_liquor\*0.0545736) + (scaled\_liquor\_\_appetizer\_\*-0.125657) + (scaled\_liver\_loaf\*-0.193752) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0706986) + (scaled\_make\_up\_remover\*-0.481677) + (scaled\_male\_cosmetics\*0.0820913) + (scaled\_margarine\*-0.0535485) + (scaled\_mayonnaise\*-0.111887) + (scaled\_meat\*-0.10727) + (scaled\_meat\_spreads\*-0.241523) + (scaled\_misc\_\_beverages\*0.350071) + (scaled\_mustard\*-0.17164) + (scaled\_napkins\*-0.0516422) + (scaled\_ne\_wspapers\*0.0190345) + (scaled\_nut\_snack\*-0.710845) + (scaled\_nuts\_div\_prunes\*0.248834) + (scaled\_oil\*0.226411) + (scaled\_onions\*0.0201101) + (scaled\_organic\_products\*-0.151826) + (scaled\_organic\_sausage\*-0.25907) + (scaled\_other\_vegetables\*-0.702541) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.00755375) + (scaled\_pasta\*0.0184018) + (scaled\_pastr\_y\*0.0162648) + (scaled\_pet\_care\*-0.0379323) + (scaled\_photo\_div\_film\*0.015191) + (scaled\_pickled\_vegetables\*-0.206157) + (scaled\_pip\_fruit\*0.0290367) + (scaled\_popcorn\*-0.010286) + (scaled\_pork\*-0.0478526) + (scaled\_pot\_plants\*0.0674369) + (scaled\_potato\_products\*0.240432) + (scaled\_preservation\_products\*-0.58687) + (scaled\_processed\_cheese\*-0.181814) + (scaled\_prosecco\*0.708012) + (scaled\_pudding\_powder\*0.292036) + (scaled\_ready\_soups\*0.133931) + (scaled\_red\_div\_blush\_wine\*0.0983234) + (scaled\_rice\*0.255193) + (scaled\_roll\_products\*0.0284783) + (scaled\_rolls\_div\_buns\*-0.277338) + (scaled\_root\_vegetables\*0.0864643) + (scaled\_rubbing\_alcohol\*-0.18891) + (scaled\_rum\*-0.517134) + (scaled\_salad\_dressing\*-0.41335) + (scaled\_salt\*-0.188677) + (scaled\_salty\_snack\*-0.0291587) + (scaled\_sauces\*-0.158278) + (scaled\_sausage\*0.00382329) + (scaled\_seasonal\_products\*-0.268238) + (scaled\_semi\_res\_finished\_bread\*0.0367918) + (scaled\_shopping\_bags\*-0.0569546) + (scaled\_skin\_care\*-0.0936093) + (scaled\_sliced\_cheese\*0.0597745) + (scaled\_snack\_products\*0.170003) + (scaled\_soap\*-0.477424) + (scaled\_soda\*0.589902) + (scaled\_soft\_cheese\*0.113543) + (scaled\_softener\*0.0251325) + (scaled\_sound\_storage\_medium\*1.44092) + (scaled\_soups\*0.24219) + (scaled\_sparkling\_wine\*-0.0174997) + (scaled\_specialty\_bar\*0.110944) + (scaled\_specialty\_cheese\*0.214281) + (scaled\_specialty\_chocolate\*-0.0570109) + (scaled\_specialty\_fat\*0.231668) + (scaled\_specialty\_vegetables\*0.0695711) + (scaled\_spices\*-0.168313) + (scaled\_spread\_cheese\*0.0352585) + (scaled\_sugar\*-0.108778) + (scaled\_sweet\_spreads\*0.318388) + (scaled\_syrup\*0.117378) + (scaled\_tea\*-0.055266) + (scaled\_tidbits\*-0.17164) + (scaled\_toilet\_cleaner\*-0.125268) + (scaled\_tropical\_fruit\*-0.106458) + (scaled\_turkey\*-0.0931959) + (scaled\_UHT\_res\_milk\*0.011614) + (scaled\_vinegar\*0.282308) + (scaled\_waffles\*-0.0345988) + (scaled\_whipped\_div\_sour\_cream\*-0.0317465) + (scaled\_whisky\*-0.894094) + (scaled\_white\_bread\*-0.129032) + (scaled\_white\_wine\*-0.0997804) + (scaled\_whole\_milk\*-0.778477) + (scaled\_yogurt\*-0.24498) + (scaled\_zwieback\*0.0499135) );

mapping\_layer\_output\_14 = tanh( -0.225133 + (scaled\_abrasive\_cleaner\*0.214185) + (scaled\_arti\_f\_\_sweetener\*1.26762) + (scaled\_baby\_cosmetics\*0.261773) + (scaled\_baby\_food\*-0.0451939) + (scaled\_bags\*0.397237) + (scaled\_baking\_powder\*-0.369037) + (scaled\_bathroom\_cleaner\*-0.0816555) + (scaled\_beef\*-0.175472) + (scaled\_berries\*-0.178351) + (scaled\_beverages\*0.0261746) + (scaled\_bottled\_beer\*6.66444) + (scaled\_bottled\_water\*0.515083) + (scaled\_brandy\*0.0769098) + (scaled\_brown\_bread\*-0.00573657) + (scaled\_butter\*0.00515173) + (scaled\_butter\_milk\*0.00548174) + (scaled\_cake\_bar\*0.28454) + (scaled\_candles\*-0.61646) + (scaled\_candy\*-0.158248) + (scaled\_canned\_beer\*1.52191) + (scaled\_canned\_fish\*0.67224) + (scaled\_canned\_fruit\*-1.22411) + (scaled\_canned\_vegetables\*0.231548) + (scaled\_cat\_food\*0.0901683) + (scaled\_cereals\*-0.475628) + (scaled\_chewing\_gum\*-0.522285) + (scaled\_chicken\*0.117164) + (scaled\_chocolate\*0.45249) + (scaled\_chocolate\_marshmallow\*0.368688) + (scaled\_citrus\_fruit\*0.802595) + (scaled\_cleaner\*-0.0177218) + (scaled\_cling\_film\_div\_bags\*0.477011) + (scaled\_cocoa\_drinks\*-1.6505) + (scaled\_coffee\*0.847072) + (scaled\_condensed\_milk\*0.157275) + (scaled\_cooking\_chocolate\*1.0049) + (scaled\_cookware\*0.912054) + (scaled\_cream\*3.48679) + (scaled\_cream\_cheese\*0.294486) + (scaled\_curd\*0.156862) + (scaled\_curd\_cheese\*0.784096) + (scaled\_decalci\_fier\*-0.362263) + (scaled\_dental\_care\*0.181716) + (scaled\_dessert\*0.409269) + (scaled\_detergent\*-0.261522) + (scaled\_dish\_cleaner\*0.0366957) + (scaled\_dishes\*-0.490106) + (scaled\_dog\_food\*0.640155) + (scaled\_domestic\_eggs\*-0.152975) + (scaled\_female\_sanitary\_products\*-0.225406) + (scaled\_finished\_products\*0.501935) + (scaled\_fish\*-0.485703) + (scaled\_flour\*0.541021) + (scaled\_flower\_\_seeds\_\*-0.482371) + (scaled\_flower\_soil\_div\_fertilizer\*0.222431) + (scaled\_frankfurter\*0.158392) + (scaled\_frozen\_chicken\*-0.285208) + (scaled\_frozen\_dessert\*0.451918) + (scaled\_frozen\_fish\*-0.0548339) + (scaled\_frozen\_fruits\*-0.471591) + (scaled\_frozen\_meals\*0.141053) + (scaled\_frozen\_potato\_products\*-0.20555) + (scaled\_frozen\_vegetables\*0.163794) + (scaled\_fruit\_div\_vegetable\_juice\*-0.222215) + (scaled\_grapes\*-0.222287) + (scaled\_hair\_spray\*-0.20505) + (scaled\_ham\*-0.089938) + (scaled\_hamburger\_meat\*0.319358) + (scaled\_hard\_cheese\*-0.10882) + (scaled\_herbs\*-0.11427) + (scaled\_honey\*0.795543) + (scaled\_house\_keeping\_products\*0.0184076) + (scaled\_hygiene\_articles\*-0.140077) + (scaled\_ice\_cream\*1.3044) + (scaled\_instant\_coffee\*0.214167) + (scaled\_Instant\_food\_products\*-0.099414) + (scaled\_jam\*-0.277821) + (scaled\_ketchup\*0.880655) + (scaled\_kitchen\_towels\*0.48819) + (scaled\_kitchen\_utensil\*0.195586) + (scaled\_light\_bulbs\*-0.0936121) + (scaled\_liqueur\*1.73222) + (scaled\_liquor\*-0.712337) + (scaled\_liquor\_\_appetizer\_\*-0.0544358) + (scaled\_liver\_loaf\*0.284379) + (scaled\_long\_li\_fe\_bakery\_product\*0.0820857) + (scaled\_make\_up\_remover\*-0.663023) + (scaled\_male\_cosmetics\*1.26236) + (scaled\_margarine\*0.101101) + (scaled\_mayonnaise\*-0.334562) + (scaled\_meat\*0.111926) + (scaled\_meat\_spreads\*-0.047043) + (scaled\_misc\_\_beverages\*0.326874) + (scaled\_mustard\*0.177398) + (scaled\_napkins\*0.0406991) + (scaled\_ne\_wspapers\*-0.0352083) + (scaled\_nut\_snack\*1.01979) + (scaled\_nuts\_div\_prunes\*2.06159) + (scaled\_oil\*-0.0431713) + (scaled\_onions\*0.0381101) + (scaled\_organic\_products\*0.604731) + (scaled\_organic\_sausage\*-0.547719) + (scaled\_other\_vegetables\*-0.122808) + (scaled\_packaged\_fruit\_div\_vegetables\*0.181565) + (scaled\_pasta\*0.224111) + (scaled\_pastr\_y\*0.687373) + (scaled\_pet\_care\*-0.0814945) + (scaled\_photo\_div\_film\*5.91745) + (scaled\_pickled\_vegetables\*-0.387479) + (scaled\_pip\_fruit\*0.753457) + (scaled\_popcorn\*0.175682) + (scaled\_pork\*-0.328352) + (scaled\_pot\_plants\*-0.202683) + (scaled\_potato\_products\*0.5292) + (scaled\_preservation\_products\*-1.10023) + (scaled\_processed\_cheese\*-0.0961501) + (scaled\_prosecco\*-0.514368) + (scaled\_pudding\_powder\*0.00128672) + (scaled\_ready\_soups\*-0.469217) + (scaled\_red\_div\_blush\_wine\*-0.309972) + (scaled\_rice\*0.528746) + (scaled\_roll\_products\*0.138186) + (scaled\_rolls\_div\_buns\*1.53204) + (scaled\_root\_vegetables\*5.83802) + (scaled\_rubbing\_alcohol\*-1.61373) + (scaled\_rum\*-0.833263) + (scaled\_salad\_dressing\*-0.391435) + (scaled\_salt\*-0.501956) + (scaled\_salty\_snack\*-0.0491846) + (scaled\_sauces\*0.181309) + (scaled\_sausage\*0.174439) + (scaled\_seasonal\_products\*-0.0821107) + (scaled\_semi\_res\_finished\_bread\*0.192034) + (scaled\_shopping\_bags\*0.828951) + (scaled\_skin\_care\*0.441721) + (scaled\_sliced\_cheese\*0.173543) + (scaled\_snack\_products\*0.820017) + (scaled\_soap\*1.64374) + (scaled\_soda\*0.759768) + (scaled\_soft\_cheese\*0.235821) + (scaled\_softener\*-0.447633) + (scaled\_sound\_storage\_medium\*-0.336517) + (scaled\_soups\*0.123685) + (scaled\_sparkling\_wine\*0.223937) + (scaled\_specialty\_bar\*0.0493577) + (scaled\_specialty\_cheese\*-0.219125) + (scaled\_specialty\_chocolate\*-0.362797) + (scaled\_specialty\_fat\*0.490657) + (scaled\_specialty\_vegetables\*3.44682) + (scaled\_spices\*-0.0315834) + (scaled\_spread\_cheese\*0.33546) + (scaled\_sugar\*-0.138262) + (scaled\_sweet\_spreads\*-0.217319) + (scaled\_syrup\*-0.972206) + (scaled\_tea\*0.118018) + (scaled\_tidbits\*-0.0101489) + (scaled\_toilet\_cleaner\*1.48519) + (scaled\_tropical\_fruit\*0.606904) + (scaled\_turkey\*-0.125515) + (scaled\_UHT\_res\_milk\*-0.0957232) + (scaled\_vinegar\*0.333273) + (scaled\_waffles\*-0.0488572) + (scaled\_whipped\_div\_sour\_cream\*0.227537) + (scaled\_whisky\*0.951285) + (scaled\_white\_bread\*0.0588337) + (scaled\_white\_wine\*1.06309) + (scaled\_whole\_milk\*2.21013) + (scaled\_yogurt\*3.5336) + (scaled\_zwieback\*0.329135) );

mapping\_layer\_output\_15 = tanh( 0.705503 + (scaled\_abrasive\_cleaner\*0.156278) + (scaled\_arti\_f\_\_sweetener\*0.38617) + (scaled\_baby\_cosmetics\*-0.158216) + (scaled\_baby\_food\*-1.31934) + (scaled\_bags\*-0.0432526) + (scaled\_baking\_powder\*-0.341478) + (scaled\_bathroom\_cleaner\*0.942319) + (scaled\_beef\*0.135904) + (scaled\_berries\*0.0316094) + (scaled\_beverages\*-0.035535) + (scaled\_bottled\_beer\*0.281897) + (scaled\_bottled\_water\*0.470521) + (scaled\_brandy\*-0.0394684) + (scaled\_brown\_bread\*-0.0303323) + (scaled\_butter\*-0.243281) + (scaled\_butter\_milk\*0.0726464) + (scaled\_cake\_bar\*0.0315852) + (scaled\_candles\*-0.304796) + (scaled\_candy\*-0.191044) + (scaled\_canned\_beer\*-0.0463652) + (scaled\_canned\_fish\*-0.077051) + (scaled\_canned\_fruit\*-0.275465) + (scaled\_canned\_vegetables\*-0.562898) + (scaled\_cat\_food\*-0.0124292) + (scaled\_cereals\*-0.301479) + (scaled\_chewing\_gum\*-0.0232997) + (scaled\_chicken\*-0.267654) + (scaled\_chocolate\*-0.0593277) + (scaled\_chocolate\_marshmallow\*0.0626959) + (scaled\_citrus\_fruit\*-0.454903) + (scaled\_cleaner\*-0.0736888) + (scaled\_cling\_film\_div\_bags\*-0.0608095) + (scaled\_cocoa\_drinks\*-0.216878) + (scaled\_coffee\*0.308367) + (scaled\_condensed\_milk\*-0.202284) + (scaled\_cooking\_chocolate\*0.173655) + (scaled\_cookware\*-0.766428) + (scaled\_cream\*0.0443046) + (scaled\_cream\_cheese\*-0.134491) + (scaled\_curd\*-0.0645129) + (scaled\_curd\_cheese\*-0.0221223) + (scaled\_decalci\_fier\*2.01191) + (scaled\_dental\_care\*0.100867) + (scaled\_dessert\*-0.006126) + (scaled\_detergent\*-0.302689) + (scaled\_dish\_cleaner\*-0.085502) + (scaled\_dishes\*-0.217923) + (scaled\_dog\_food\*-0.2765) + (scaled\_domestic\_eggs\*-0.44321) + (scaled\_female\_sanitary\_products\*-0.600037) + (scaled\_finished\_products\*-0.406251) + (scaled\_fish\*-0.0161301) + (scaled\_flour\*0.177263) + (scaled\_flower\_\_seeds\_\*-0.154195) + (scaled\_flower\_soil\_div\_fertilizer\*-0.112965) + (scaled\_frankfurter\*-0.31376) + (scaled\_frozen\_chicken\*-0.309551) + (scaled\_frozen\_dessert\*0.172453) + (scaled\_frozen\_fish\*0.553802) + (scaled\_frozen\_fruits\*0.0632873) + (scaled\_frozen\_meals\*0.242904) + (scaled\_frozen\_potato\_products\*-0.0314888) + (scaled\_frozen\_vegetables\*-0.0103097) + (scaled\_fruit\_div\_vegetable\_juice\*0.0733534) + (scaled\_grapes\*0.185223) + (scaled\_hair\_spray\*-0.473897) + (scaled\_ham\*-0.0538305) + (scaled\_hamburger\_meat\*0.0675497) + (scaled\_hard\_cheese\*-0.246096) + (scaled\_herbs\*0.0659354) + (scaled\_honey\*0.0871357) + (scaled\_house\_keeping\_products\*-0.274234) + (scaled\_hygiene\_articles\*-0.043092) + (scaled\_ice\_cream\*-0.484125) + (scaled\_instant\_coffee\*-0.336537) + (scaled\_Instant\_food\_products\*-0.0416394) + (scaled\_jam\*-0.294256) + (scaled\_ketchup\*-0.035435) + (scaled\_kitchen\_towels\*0.365389) + (scaled\_kitchen\_utensil\*0.232596) + (scaled\_light\_bulbs\*-0.781019) + (scaled\_liqueur\*0.849576) + (scaled\_liquor\*-0.162282) + (scaled\_liquor\_\_appetizer\_\*-0.113079) + (scaled\_liver\_loaf\*0.0322104) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0422619) + (scaled\_make\_up\_remover\*-0.102681) + (scaled\_male\_cosmetics\*-0.461712) + (scaled\_margarine\*-0.168208) + (scaled\_mayonnaise\*-0.201502) + (scaled\_meat\*0.0747739) + (scaled\_meat\_spreads\*-0.194563) + (scaled\_misc\_\_beverages\*0.0322662) + (scaled\_mustard\*0.135605) + (scaled\_napkins\*0.00102022) + (scaled\_ne\_wspapers\*0.0676937) + (scaled\_nut\_snack\*-0.513433) + (scaled\_nuts\_div\_prunes\*-0.250877) + (scaled\_oil\*0.112175) + (scaled\_onions\*-0.0145754) + (scaled\_organic\_products\*0.107597) + (scaled\_organic\_sausage\*0.593633) + (scaled\_other\_vegetables\*-0.536399) + (scaled\_packaged\_fruit\_div\_vegetables\*0.285105) + (scaled\_pasta\*-0.0194177) + (scaled\_pastr\_y\*-0.387023) + (scaled\_pet\_care\*0.260575) + (scaled\_photo\_div\_film\*-0.297895) + (scaled\_pickled\_vegetables\*0.144453) + (scaled\_pip\_fruit\*0.0488438) + (scaled\_popcorn\*0.296128) + (scaled\_pork\*-0.0640282) + (scaled\_pot\_plants\*-0.251562) + (scaled\_potato\_products\*-0.0744778) + (scaled\_preservation\_products\*-0.13121) + (scaled\_processed\_cheese\*-0.240952) + (scaled\_prosecco\*-1.01872) + (scaled\_pudding\_powder\*1.29458) + (scaled\_ready\_soups\*-0.40686) + (scaled\_red\_div\_blush\_wine\*-0.0901918) + (scaled\_rice\*-0.394342) + (scaled\_roll\_products\*0.0236526) + (scaled\_rolls\_div\_buns\*0.454945) + (scaled\_root\_vegetables\*0.350299) + (scaled\_rubbing\_alcohol\*0.171368) + (scaled\_rum\*0.132701) + (scaled\_salad\_dressing\*0.108964) + (scaled\_salt\*0.524008) + (scaled\_salty\_snack\*-0.17351) + (scaled\_sauces\*-0.106134) + (scaled\_sausage\*-0.202314) + (scaled\_seasonal\_products\*-0.112289) + (scaled\_semi\_res\_finished\_bread\*-0.298499) + (scaled\_shopping\_bags\*0.947177) + (scaled\_skin\_care\*-1.0158) + (scaled\_sliced\_cheese\*0.359597) + (scaled\_snack\_products\*0.00982888) + (scaled\_soap\*0.669829) + (scaled\_soda\*0.795671) + (scaled\_soft\_cheese\*-0.3087) + (scaled\_softener\*-0.315086) + (scaled\_sound\_storage\_medium\*0.758511) + (scaled\_soups\*0.10487) + (scaled\_sparkling\_wine\*0.119859) + (scaled\_specialty\_bar\*-0.409131) + (scaled\_specialty\_cheese\*0.136878) + (scaled\_specialty\_chocolate\*-0.234433) + (scaled\_specialty\_fat\*-0.931239) + (scaled\_specialty\_vegetables\*-0.909973) + (scaled\_spices\*0.100865) + (scaled\_spread\_cheese\*-0.0607237) + (scaled\_sugar\*-0.206453) + (scaled\_sweet\_spreads\*-0.162264) + (scaled\_syrup\*-1.07853) + (scaled\_tea\*-0.0693952) + (scaled\_tidbits\*-0.964839) + (scaled\_toilet\_cleaner\*-0.259456) + (scaled\_tropical\_fruit\*0.43884) + (scaled\_turkey\*0.29631) + (scaled\_UHT\_res\_milk\*0.0902522) + (scaled\_vinegar\*-0.304528) + (scaled\_waffles\*-0.0361313) + (scaled\_whipped\_div\_sour\_cream\*-0.182081) + (scaled\_whisky\*0.162611) + (scaled\_white\_bread\*0.0298656) + (scaled\_white\_wine\*1.30816) + (scaled\_whole\_milk\*-0.281979) + (scaled\_yogurt\*1.16221) + (scaled\_zwieback\*0.0218641) );

mapping\_layer\_output\_16 = tanh( 0.173244 + (scaled\_abrasive\_cleaner\*-1.32567) + (scaled\_arti\_f\_\_sweetener\*0.789742) + (scaled\_baby\_cosmetics\*-0.197505) + (scaled\_baby\_food\*-0.173422) + (scaled\_bags\*-0.182824) + (scaled\_baking\_powder\*-0.17907) + (scaled\_bathroom\_cleaner\*-1.65741) + (scaled\_beef\*0.0500693) + (scaled\_berries\*-0.239552) + (scaled\_beverages\*0.183248) + (scaled\_bottled\_beer\*0.751635) + (scaled\_bottled\_water\*-0.00372569) + (scaled\_brandy\*-0.780581) + (scaled\_brown\_bread\*-0.0163099) + (scaled\_butter\*0.0090037) + (scaled\_butter\_milk\*-0.409322) + (scaled\_cake\_bar\*0.484816) + (scaled\_candles\*-0.083941) + (scaled\_candy\*-0.000784648) + (scaled\_canned\_beer\*-4.43684) + (scaled\_canned\_fish\*-0.720398) + (scaled\_canned\_fruit\*0.116717) + (scaled\_canned\_vegetables\*-0.304426) + (scaled\_cat\_food\*-0.183334) + (scaled\_cereals\*0.34268) + (scaled\_chewing\_gum\*-0.150036) + (scaled\_chicken\*0.440613) + (scaled\_chocolate\*-0.281778) + (scaled\_chocolate\_marshmallow\*-0.283428) + (scaled\_citrus\_fruit\*-0.137267) + (scaled\_cleaner\*0.515511) + (scaled\_cling\_film\_div\_bags\*-0.168866) + (scaled\_cocoa\_drinks\*-3.48164) + (scaled\_coffee\*-0.345614) + (scaled\_condensed\_milk\*-0.106281) + (scaled\_cooking\_chocolate\*0.245013) + (scaled\_cookware\*-0.0445537) + (scaled\_cream\*0.210505) + (scaled\_cream\_cheese\*0.180079) + (scaled\_curd\*0.361956) + (scaled\_curd\_cheese\*0.103082) + (scaled\_decalci\_fier\*-1.38749) + (scaled\_dental\_care\*0.461511) + (scaled\_dessert\*0.058399) + (scaled\_detergent\*-0.0986501) + (scaled\_dish\_cleaner\*-0.157858) + (scaled\_dishes\*-0.129622) + (scaled\_dog\_food\*-0.534886) + (scaled\_domestic\_eggs\*0.129375) + (scaled\_female\_sanitary\_products\*0.539489) + (scaled\_finished\_products\*0.162505) + (scaled\_fish\*0.132404) + (scaled\_flour\*0.243813) + (scaled\_flower\_\_seeds\_\*-0.641311) + (scaled\_flower\_soil\_div\_fertilizer\*-0.69409) + (scaled\_frankfurter\*0.0852336) + (scaled\_frozen\_chicken\*-0.984329) + (scaled\_frozen\_dessert\*-0.451586) + (scaled\_frozen\_fish\*0.131267) + (scaled\_frozen\_fruits\*-2.6146) + (scaled\_frozen\_meals\*0.235093) + (scaled\_frozen\_potato\_products\*-0.192944) + (scaled\_frozen\_vegetables\*-0.0787817) + (scaled\_fruit\_div\_vegetable\_juice\*0.106242) + (scaled\_grapes\*0.102135) + (scaled\_hair\_spray\*-0.00987098) + (scaled\_ham\*0.310242) + (scaled\_hamburger\_meat\*-0.491181) + (scaled\_hard\_cheese\*-0.207228) + (scaled\_herbs\*-0.09608) + (scaled\_honey\*0.222477) + (scaled\_house\_keeping\_products\*-2.04236) + (scaled\_hygiene\_articles\*0.439448) + (scaled\_ice\_cream\*-0.861238) + (scaled\_instant\_coffee\*0.0344027) + (scaled\_Instant\_food\_products\*0.539365) + (scaled\_jam\*-0.516175) + (scaled\_ketchup\*-0.012301) + (scaled\_kitchen\_towels\*-0.104253) + (scaled\_kitchen\_utensil\*-0.375641) + (scaled\_light\_bulbs\*0.132563) + (scaled\_liqueur\*0.816668) + (scaled\_liquor\*1.20333) + (scaled\_liquor\_\_appetizer\_\*0.104506) + (scaled\_liver\_loaf\*0.673218) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0257231) + (scaled\_make\_up\_remover\*0.409485) + (scaled\_male\_cosmetics\*-0.376099) + (scaled\_margarine\*-0.0842751) + (scaled\_mayonnaise\*-0.480187) + (scaled\_meat\*0.325801) + (scaled\_meat\_spreads\*-0.260574) + (scaled\_misc\_\_beverages\*-0.761368) + (scaled\_mustard\*0.313545) + (scaled\_napkins\*-0.0681018) + (scaled\_ne\_wspapers\*-0.255152) + (scaled\_nut\_snack\*-0.311069) + (scaled\_nuts\_div\_prunes\*-0.148855) + (scaled\_oil\*-0.117819) + (scaled\_onions\*-0.405943) + (scaled\_organic\_products\*-1.41241) + (scaled\_organic\_sausage\*0.648299) + (scaled\_other\_vegetables\*-2.51252) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.0940345) + (scaled\_pasta\*-0.322557) + (scaled\_pastr\_y\*0.0782244) + (scaled\_pet\_care\*0.121635) + (scaled\_photo\_div\_film\*0.213348) + (scaled\_pickled\_vegetables\*0.0127011) + (scaled\_pip\_fruit\*-0.0466291) + (scaled\_popcorn\*-1.15706) + (scaled\_pork\*0.0507095) + (scaled\_pot\_plants\*-0.368546) + (scaled\_potato\_products\*-0.485205) + (scaled\_preservation\_products\*-1.32792) + (scaled\_processed\_cheese\*0.0690927) + (scaled\_prosecco\*2.25125) + (scaled\_pudding\_powder\*-0.3087) + (scaled\_ready\_soups\*0.147265) + (scaled\_red\_div\_blush\_wine\*0.49871) + (scaled\_rice\*-0.197714) + (scaled\_roll\_products\*0.496616) + (scaled\_rolls\_div\_buns\*-0.829352) + (scaled\_root\_vegetables\*-0.172782) + (scaled\_rubbing\_alcohol\*-3.65234) + (scaled\_rum\*-0.821322) + (scaled\_salad\_dressing\*2.0218) + (scaled\_salt\*0.056101) + (scaled\_salty\_snack\*0.00897894) + (scaled\_sauces\*0.528043) + (scaled\_sausage\*0.143618) + (scaled\_seasonal\_products\*-0.0238814) + (scaled\_semi\_res\_finished\_bread\*-0.0787928) + (scaled\_shopping\_bags\*-0.249037) + (scaled\_skin\_care\*0.0205913) + (scaled\_sliced\_cheese\*-0.51123) + (scaled\_snack\_products\*-0.113751) + (scaled\_soap\*0.408094) + (scaled\_soda\*-0.19405) + (scaled\_soft\_cheese\*0.167129) + (scaled\_softener\*-0.512699) + (scaled\_sound\_storage\_medium\*-0.651835) + (scaled\_soups\*-0.499093) + (scaled\_sparkling\_wine\*0.203498) + (scaled\_specialty\_bar\*0.0430452) + (scaled\_specialty\_cheese\*-0.800268) + (scaled\_specialty\_chocolate\*-0.351727) + (scaled\_specialty\_fat\*-0.300632) + (scaled\_specialty\_vegetables\*0.322939) + (scaled\_spices\*-0.0330388) + (scaled\_spread\_cheese\*0.01591) + (scaled\_sugar\*-0.0461339) + (scaled\_sweet\_spreads\*0.0887617) + (scaled\_syrup\*0.153155) + (scaled\_tea\*-0.364789) + (scaled\_tidbits\*2.14986) + (scaled\_toilet\_cleaner\*-0.228706) + (scaled\_tropical\_fruit\*0.298445) + (scaled\_turkey\*0.215904) + (scaled\_UHT\_res\_milk\*0.0526924) + (scaled\_vinegar\*-0.37556) + (scaled\_waffles\*-0.121811) + (scaled\_whipped\_div\_sour\_cream\*-0.141834) + (scaled\_whisky\*0.257081) + (scaled\_white\_bread\*-0.236244) + (scaled\_white\_wine\*-0.0362137) + (scaled\_whole\_milk\*-5.23927) + (scaled\_yogurt\*-0.544794) + (scaled\_zwieback\*-0.404152) );

mapping\_layer\_output\_17 = tanh( -0.324266 + (scaled\_abrasive\_cleaner\*-0.0808585) + (scaled\_arti\_f\_\_sweetener\*0.27351) + (scaled\_baby\_cosmetics\*-0.339637) + (scaled\_baby\_food\*-0.523328) + (scaled\_bags\*0.155469) + (scaled\_baking\_powder\*-0.584378) + (scaled\_bathroom\_cleaner\*-0.124985) + (scaled\_beef\*0.459804) + (scaled\_berries\*0.0526251) + (scaled\_beverages\*0.357701) + (scaled\_bottled\_beer\*0.21278) + (scaled\_bottled\_water\*0.137208) + (scaled\_brandy\*-0.403936) + (scaled\_brown\_bread\*-0.0912226) + (scaled\_butter\*0.358139) + (scaled\_butter\_milk\*-0.22315) + (scaled\_cake\_bar\*-0.389668) + (scaled\_candles\*-0.493354) + (scaled\_candy\*0.345916) + (scaled\_canned\_beer\*1.81979) + (scaled\_canned\_fish\*-0.161101) + (scaled\_canned\_fruit\*0.992847) + (scaled\_canned\_vegetables\*0.172472) + (scaled\_cat\_food\*-0.0507081) + (scaled\_cereals\*0.24782) + (scaled\_chewing\_gum\*-0.261179) + (scaled\_chicken\*0.358257) + (scaled\_chocolate\*-0.0872199) + (scaled\_chocolate\_marshmallow\*0.254716) + (scaled\_citrus\_fruit\*0.49872) + (scaled\_cleaner\*0.127251) + (scaled\_cling\_film\_div\_bags\*0.180761) + (scaled\_cocoa\_drinks\*-0.526988) + (scaled\_coffee\*-0.410168) + (scaled\_condensed\_milk\*-0.576671) + (scaled\_cooking\_chocolate\*0.100908) + (scaled\_cookware\*-0.444863) + (scaled\_cream\*1.31543) + (scaled\_cream\_cheese\*0.198249) + (scaled\_curd\*0.526734) + (scaled\_curd\_cheese\*0.666326) + (scaled\_decalci\_fier\*0.408925) + (scaled\_dental\_care\*1.28605) + (scaled\_dessert\*-0.230452) + (scaled\_detergent\*-0.233454) + (scaled\_dish\_cleaner\*0.62278) + (scaled\_dishes\*-0.364841) + (scaled\_dog\_food\*-0.0647322) + (scaled\_domestic\_eggs\*0.241142) + (scaled\_female\_sanitary\_products\*-0.582552) + (scaled\_finished\_products\*0.42484) + (scaled\_fish\*0.312789) + (scaled\_flour\*0.311669) + (scaled\_flower\_\_seeds\_\*0.83898) + (scaled\_flower\_soil\_div\_fertilizer\*0.894323) + (scaled\_frankfurter\*-0.117293) + (scaled\_frozen\_chicken\*1.22075) + (scaled\_frozen\_dessert\*0.356614) + (scaled\_frozen\_fish\*0.844393) + (scaled\_frozen\_fruits\*1.59298) + (scaled\_frozen\_meals\*-0.00525842) + (scaled\_frozen\_potato\_products\*0.493572) + (scaled\_frozen\_vegetables\*0.00401796) + (scaled\_fruit\_div\_vegetable\_juice\*-0.140017) + (scaled\_grapes\*0.344612) + (scaled\_hair\_spray\*2.45403) + (scaled\_ham\*-0.104623) + (scaled\_hamburger\_meat\*0.285461) + (scaled\_hard\_cheese\*-0.151383) + (scaled\_herbs\*-0.130309) + (scaled\_honey\*2.71302) + (scaled\_house\_keeping\_products\*-0.318122) + (scaled\_hygiene\_articles\*0.363573) + (scaled\_ice\_cream\*-0.53133) + (scaled\_instant\_coffee\*0.256429) + (scaled\_Instant\_food\_products\*-0.255092) + (scaled\_jam\*1.45034) + (scaled\_ketchup\*0.503324) + (scaled\_kitchen\_towels\*0.215327) + (scaled\_kitchen\_utensil\*0.278408) + (scaled\_light\_bulbs\*-0.0610176) + (scaled\_liqueur\*0.656009) + (scaled\_liquor\*0.478962) + (scaled\_liquor\_\_appetizer\_\*-0.219109) + (scaled\_liver\_loaf\*-0.000338536) + (scaled\_long\_li\_fe\_bakery\_product\*0.229018) + (scaled\_make\_up\_remover\*1.24658) + (scaled\_male\_cosmetics\*-0.230137) + (scaled\_margarine\*0.129325) + (scaled\_mayonnaise\*-0.168228) + (scaled\_meat\*0.0433423) + (scaled\_meat\_spreads\*-0.0461228) + (scaled\_misc\_\_beverages\*0.356792) + (scaled\_mustard\*0.499347) + (scaled\_napkins\*-0.235066) + (scaled\_ne\_wspapers\*-0.029543) + (scaled\_nut\_snack\*-0.255589) + (scaled\_nuts\_div\_prunes\*0.170493) + (scaled\_oil\*-0.0506054) + (scaled\_onions\*0.158831) + (scaled\_organic\_products\*0.0584555) + (scaled\_organic\_sausage\*0.723699) + (scaled\_other\_vegetables\*0.967868) + (scaled\_packaged\_fruit\_div\_vegetables\*0.709898) + (scaled\_pasta\*-0.0598724) + (scaled\_pastr\_y\*0.197507) + (scaled\_pet\_care\*0.652249) + (scaled\_photo\_div\_film\*1.00332) + (scaled\_pickled\_vegetables\*-0.129122) + (scaled\_pip\_fruit\*-0.0116805) + (scaled\_popcorn\*-0.612849) + (scaled\_pork\*-0.220446) + (scaled\_pot\_plants\*-0.310418) + (scaled\_potato\_products\*0.618465) + (scaled\_preservation\_products\*-1.23477) + (scaled\_processed\_cheese\*0.220667) + (scaled\_prosecco\*0.280303) + (scaled\_pudding\_powder\*0.156062) + (scaled\_ready\_soups\*2.56527) + (scaled\_red\_div\_blush\_wine\*0.0876746) + (scaled\_rice\*-0.571879) + (scaled\_roll\_products\*0.195808) + (scaled\_rolls\_div\_buns\*0.75322) + (scaled\_root\_vegetables\*0.793389) + (scaled\_rubbing\_alcohol\*0.911745) + (scaled\_rum\*0.746249) + (scaled\_salad\_dressing\*-1.20611) + (scaled\_salt\*0.0783999) + (scaled\_salty\_snack\*0.124047) + (scaled\_sauces\*0.958402) + (scaled\_sausage\*0.0277103) + (scaled\_seasonal\_products\*-0.114373) + (scaled\_semi\_res\_finished\_bread\*0.0512277) + (scaled\_shopping\_bags\*0.17754) + (scaled\_skin\_care\*0.308902) + (scaled\_sliced\_cheese\*-0.474125) + (scaled\_snack\_products\*0.179219) + (scaled\_soap\*0.838204) + (scaled\_soda\*0.872421) + (scaled\_soft\_cheese\*0.247024) + (scaled\_softener\*0.084043) + (scaled\_sound\_storage\_medium\*-0.139683) + (scaled\_soups\*-0.742001) + (scaled\_sparkling\_wine\*0.695734) + (scaled\_specialty\_bar\*0.0858484) + (scaled\_specialty\_cheese\*0.198023) + (scaled\_specialty\_chocolate\*-0.454832) + (scaled\_specialty\_fat\*0.362569) + (scaled\_specialty\_vegetables\*2.00479) + (scaled\_spices\*-0.200699) + (scaled\_spread\_cheese\*-0.172955) + (scaled\_sugar\*0.39702) + (scaled\_sweet\_spreads\*-0.538096) + (scaled\_syrup\*-0.175673) + (scaled\_tea\*-0.600743) + (scaled\_tidbits\*1.60959) + (scaled\_toilet\_cleaner\*-1.87375) + (scaled\_tropical\_fruit\*-0.196949) + (scaled\_turkey\*-0.371898) + (scaled\_UHT\_res\_milk\*0.115808) + (scaled\_vinegar\*-0.246054) + (scaled\_waffles\*0.0963495) + (scaled\_whipped\_div\_sour\_cream\*-0.0470864) + (scaled\_whisky\*-1.94853) + (scaled\_white\_bread\*-0.0509903) + (scaled\_white\_wine\*0.444447) + (scaled\_whole\_milk\*1.21663) + (scaled\_yogurt\*0.782701) + (scaled\_zwieback\*-0.517392) );

mapping\_layer\_output\_18 = tanh( -1.45977 + (scaled\_abrasive\_cleaner\*0.161029) + (scaled\_arti\_f\_\_sweetener\*0.153083) + (scaled\_baby\_cosmetics\*-1.17391) + (scaled\_baby\_food\*0.701773) + (scaled\_bags\*0.205272) + (scaled\_baking\_powder\*-0.14793) + (scaled\_bathroom\_cleaner\*0.207626) + (scaled\_beef\*0.08504) + (scaled\_berries\*0.179923) + (scaled\_beverages\*0.0104231) + (scaled\_bottled\_beer\*-0.192301) + (scaled\_bottled\_water\*0.464533) + (scaled\_brandy\*-0.226936) + (scaled\_brown\_bread\*0.167388) + (scaled\_butter\*0.144397) + (scaled\_butter\_milk\*-0.188325) + (scaled\_cake\_bar\*0.332476) + (scaled\_candles\*-0.00759349) + (scaled\_candy\*-0.0984399) + (scaled\_canned\_beer\*0.102399) + (scaled\_canned\_fish\*-0.150598) + (scaled\_canned\_fruit\*0.391269) + (scaled\_canned\_vegetables\*0.256681) + (scaled\_cat\_food\*-0.0277883) + (scaled\_cereals\*-0.0737184) + (scaled\_chewing\_gum\*0.0843478) + (scaled\_chicken\*0.0829308) + (scaled\_chocolate\*0.202812) + (scaled\_chocolate\_marshmallow\*-0.131478) + (scaled\_citrus\_fruit\*0.165729) + (scaled\_cleaner\*-0.291936) + (scaled\_cling\_film\_div\_bags\*0.372015) + (scaled\_cocoa\_drinks\*0.147345) + (scaled\_coffee\*0.108193) + (scaled\_condensed\_milk\*0.296698) + (scaled\_cooking\_chocolate\*0.259013) + (scaled\_cookware\*0.499919) + (scaled\_cream\*-0.191903) + (scaled\_cream\_cheese\*0.191559) + (scaled\_curd\*0.00102547) + (scaled\_curd\_cheese\*-0.266167) + (scaled\_decalci\_fier\*0.286607) + (scaled\_dental\_care\*-0.346301) + (scaled\_dessert\*0.00560257) + (scaled\_detergent\*-0.0856685) + (scaled\_dish\_cleaner\*0.123103) + (scaled\_dishes\*0.0964237) + (scaled\_dog\_food\*0.574449) + (scaled\_domestic\_eggs\*0.315239) + (scaled\_female\_sanitary\_products\*-0.592637) + (scaled\_finished\_products\*0.240803) + (scaled\_fish\*-0.479987) + (scaled\_flour\*-0.0408994) + (scaled\_flower\_\_seeds\_\*0.324606) + (scaled\_flower\_soil\_div\_fertilizer\*0.291902) + (scaled\_frankfurter\*0.0727331) + (scaled\_frozen\_chicken\*0.466574) + (scaled\_frozen\_dessert\*0.290382) + (scaled\_frozen\_fish\*-0.196106) + (scaled\_frozen\_fruits\*0.0350911) + (scaled\_frozen\_meals\*0.231761) + (scaled\_frozen\_potato\_products\*0.223137) + (scaled\_frozen\_vegetables\*0.0403489) + (scaled\_fruit\_div\_vegetable\_juice\*0.168628) + (scaled\_grapes\*0.145451) + (scaled\_hair\_spray\*-0.0409224) + (scaled\_ham\*0.0411228) + (scaled\_hamburger\_meat\*0.146721) + (scaled\_hard\_cheese\*-0.0566377) + (scaled\_herbs\*0.00439571) + (scaled\_honey\*-1.25459) + (scaled\_house\_keeping\_products\*0.374933) + (scaled\_hygiene\_articles\*-0.0178486) + (scaled\_ice\_cream\*0.250484) + (scaled\_instant\_coffee\*0.245053) + (scaled\_Instant\_food\_products\*-0.0833128) + (scaled\_jam\*0.557684) + (scaled\_ketchup\*0.76868) + (scaled\_kitchen\_towels\*0.115801) + (scaled\_kitchen\_utensil\*0.624954) + (scaled\_light\_bulbs\*0.224777) + (scaled\_liqueur\*0.519465) + (scaled\_liquor\*-0.204846) + (scaled\_liquor\_\_appetizer\_\*0.358086) + (scaled\_liver\_loaf\*0.382491) + (scaled\_long\_li\_fe\_bakery\_product\*-0.0580171) + (scaled\_make\_up\_remover\*-0.305812) + (scaled\_male\_cosmetics\*-0.195948) + (scaled\_margarine\*0.192579) + (scaled\_mayonnaise\*0.0773312) + (scaled\_meat\*-0.0129478) + (scaled\_meat\_spreads\*0.563688) + (scaled\_misc\_\_beverages\*0.221905) + (scaled\_mustard\*0.331828) + (scaled\_napkins\*0.0442306) + (scaled\_ne\_wspapers\*-0.0436316) + (scaled\_nut\_snack\*-0.0953935) + (scaled\_nuts\_div\_prunes\*-0.200515) + (scaled\_oil\*0.0956325) + (scaled\_onions\*-0.147689) + (scaled\_organic\_products\*0.241322) + (scaled\_organic\_sausage\*-2.99646) + (scaled\_other\_vegetables\*-0.0291342) + (scaled\_packaged\_fruit\_div\_vegetables\*0.276537) + (scaled\_pasta\*-0.183084) + (scaled\_pastr\_y\*0.197273) + (scaled\_pet\_care\*0.395124) + (scaled\_photo\_div\_film\*0.864493) + (scaled\_pickled\_vegetables\*0.214473) + (scaled\_pip\_fruit\*0.0706418) + (scaled\_popcorn\*0.308806) + (scaled\_pork\*-0.00238295) + (scaled\_pot\_plants\*0.0661825) + (scaled\_potato\_products\*1.17807) + (scaled\_preservation\_products\*1.10799) + (scaled\_processed\_cheese\*0.240969) + (scaled\_prosecco\*-3.30527) + (scaled\_pudding\_powder\*0.221555) + (scaled\_ready\_soups\*0.324946) + (scaled\_red\_div\_blush\_wine\*0.0654545) + (scaled\_rice\*0.587828) + (scaled\_roll\_products\*0.32726) + (scaled\_rolls\_div\_buns\*0.651195) + (scaled\_root\_vegetables\*0.282581) + (scaled\_rubbing\_alcohol\*-0.732682) + (scaled\_rum\*0.169529) + (scaled\_salad\_dressing\*-0.391116) + (scaled\_salt\*-0.575973) + (scaled\_salty\_snack\*0.167099) + (scaled\_sauces\*0.319842) + (scaled\_sausage\*0.227028) + (scaled\_seasonal\_products\*0.157197) + (scaled\_semi\_res\_finished\_bread\*0.00396931) + (scaled\_shopping\_bags\*0.0594637) + (scaled\_skin\_care\*-0.0824923) + (scaled\_sliced\_cheese\*0.143987) + (scaled\_snack\_products\*0.172993) + (scaled\_soap\*1.71549) + (scaled\_soda\*-0.574549) + (scaled\_soft\_cheese\*-0.0124828) + (scaled\_softener\*0.353724) + (scaled\_sound\_storage\_medium\*-1.64477) + (scaled\_soups\*0.068439) + (scaled\_sparkling\_wine\*-0.0159415) + (scaled\_specialty\_bar\*0.281368) + (scaled\_specialty\_cheese\*-0.217475) + (scaled\_specialty\_chocolate\*0.464885) + (scaled\_specialty\_fat\*-1.23208) + (scaled\_specialty\_vegetables\*0.527532) + (scaled\_spices\*-0.21697) + (scaled\_spread\_cheese\*-0.125395) + (scaled\_sugar\*0.0150956) + (scaled\_sweet\_spreads\*0.620051) + (scaled\_syrup\*-0.112987) + (scaled\_tea\*0.749689) + (scaled\_tidbits\*-3.40845) + (scaled\_toilet\_cleaner\*0.680818) + (scaled\_tropical\_fruit\*0.245433) + (scaled\_turkey\*-0.100266) + (scaled\_UHT\_res\_milk\*0.247153) + (scaled\_vinegar\*0.744615) + (scaled\_waffles\*-0.104259) + (scaled\_whipped\_div\_sour\_cream\*0.183963) + (scaled\_whisky\*1.5005) + (scaled\_white\_bread\*0.142344) + (scaled\_white\_wine\*0.124125) + (scaled\_whole\_milk\*-1.37913) + (scaled\_yogurt\*-0.123856) + (scaled\_zwieback\*-0.108051) );

mapping\_layer\_output\_19 = tanh( 0.399049 + (scaled\_abrasive\_cleaner\*0.578699) + (scaled\_arti\_f\_\_sweetener\*0.414779) + (scaled\_baby\_cosmetics\*-0.0148808) + (scaled\_baby\_food\*-0.492608) + (scaled\_bags\*0.10272) + (scaled\_baking\_powder\*-0.0318576) + (scaled\_bathroom\_cleaner\*-0.044801) + (scaled\_beef\*-0.191327) + (scaled\_berries\*0.17424) + (scaled\_beverages\*-0.135941) + (scaled\_bottled\_beer\*0.13463) + (scaled\_bottled\_water\*1.0974) + (scaled\_brandy\*-0.0846013) + (scaled\_brown\_bread\*-0.0544239) + (scaled\_butter\*0.257411) + (scaled\_butter\_milk\*-0.0667675) + (scaled\_cake\_bar\*-0.653871) + (scaled\_candles\*-0.0351648) + (scaled\_candy\*0.0970953) + (scaled\_canned\_beer\*0.658676) + (scaled\_canned\_fish\*0.323118) + (scaled\_canned\_fruit\*0.489032) + (scaled\_canned\_vegetables\*-0.33353) + (scaled\_cat\_food\*0.0303052) + (scaled\_cereals\*0.818539) + (scaled\_chewing\_gum\*-0.0429627) + (scaled\_chicken\*-0.141578) + (scaled\_chocolate\*-0.0582137) + (scaled\_chocolate\_marshmallow\*0.574339) + (scaled\_citrus\_fruit\*0.565284) + (scaled\_cleaner\*-0.837922) + (scaled\_cling\_film\_div\_bags\*0.689144) + (scaled\_cocoa\_drinks\*-0.174855) + (scaled\_coffee\*-0.182427) + (scaled\_condensed\_milk\*-0.203669) + (scaled\_cooking\_chocolate\*1.21641) + (scaled\_cookware\*-0.0899982) + (scaled\_cream\*-0.00740139) + (scaled\_cream\_cheese\*-0.102726) + (scaled\_curd\*-0.0285379) + (scaled\_curd\_cheese\*-0.0523733) + (scaled\_decalci\_fier\*-0.745211) + (scaled\_dental\_care\*-0.749683) + (scaled\_dessert\*0.189122) + (scaled\_detergent\*-0.289495) + (scaled\_dish\_cleaner\*0.166519) + (scaled\_dishes\*-0.489241) + (scaled\_dog\_food\*0.512393) + (scaled\_domestic\_eggs\*-0.13412) + (scaled\_female\_sanitary\_products\*-0.126473) + (scaled\_finished\_products\*-1.07039) + (scaled\_fish\*0.0532501) + (scaled\_flour\*0.146929) + (scaled\_flower\_\_seeds\_\*-0.738912) + (scaled\_flower\_soil\_div\_fertilizer\*-0.0913662) + (scaled\_frankfurter\*-0.0376285) + (scaled\_frozen\_chicken\*-0.53378) + (scaled\_frozen\_dessert\*0.322065) + (scaled\_frozen\_fish\*-0.372229) + (scaled\_frozen\_fruits\*-1.07457) + (scaled\_frozen\_meals\*-0.323159) + (scaled\_frozen\_potato\_products\*0.177438) + (scaled\_frozen\_vegetables\*0.183524) + (scaled\_fruit\_div\_vegetable\_juice\*0.113808) + (scaled\_grapes\*0.165157) + (scaled\_hair\_spray\*0.16542) + (scaled\_ham\*-0.0506654) + (scaled\_hamburger\_meat\*0.0846761) + (scaled\_hard\_cheese\*-0.0696942) + (scaled\_herbs\*0.312827) + (scaled\_honey\*-2.31297) + (scaled\_house\_keeping\_products\*0.419227) + (scaled\_hygiene\_articles\*0.130404) + (scaled\_ice\_cream\*0.189333) + (scaled\_instant\_coffee\*0.275626) + (scaled\_Instant\_food\_products\*0.507567) + (scaled\_jam\*0.614569) + (scaled\_ketchup\*0.0146165) + (scaled\_kitchen\_towels\*0.612386) + (scaled\_kitchen\_utensil\*-0.357108) + (scaled\_light\_bulbs\*0.671035) + (scaled\_liqueur\*0.773619) + (scaled\_liquor\*0.0821513) + (scaled\_liquor\_\_appetizer\_\*0.409179) + (scaled\_liver\_loaf\*-0.207339) + (scaled\_long\_li\_fe\_bakery\_product\*-0.204315) + (scaled\_make\_up\_remover\*0.108577) + (scaled\_male\_cosmetics\*0.415396) + (scaled\_margarine\*-0.0210603) + (scaled\_mayonnaise\*-0.251063) + (scaled\_meat\*-0.14512) + (scaled\_meat\_spreads\*-0.343893) + (scaled\_misc\_\_beverages\*0.423367) + (scaled\_mustard\*0.239098) + (scaled\_napkins\*0.0491313) + (scaled\_ne\_wspapers\*0.258647) + (scaled\_nut\_snack\*0.3928) + (scaled\_nuts\_div\_prunes\*0.0180838) + (scaled\_oil\*0.187053) + (scaled\_onions\*0.173933) + (scaled\_organic\_products\*-0.0153643) + (scaled\_organic\_sausage\*-0.843754) + (scaled\_other\_vegetables\*-0.0965321) + (scaled\_packaged\_fruit\_div\_vegetables\*1.17457) + (scaled\_pasta\*-0.0362567) + (scaled\_pastr\_y\*-0.413925) + (scaled\_pet\_care\*-0.183109) + (scaled\_photo\_div\_film\*0.42622) + (scaled\_pickled\_vegetables\*-0.0185018) + (scaled\_pip\_fruit\*0.232684) + (scaled\_popcorn\*0.440684) + (scaled\_pork\*-0.340523) + (scaled\_pot\_plants\*0.0418155) + (scaled\_potato\_products\*1.39479) + (scaled\_preservation\_products\*-0.584771) + (scaled\_processed\_cheese\*-0.100734) + (scaled\_prosecco\*1.39638) + (scaled\_pudding\_powder\*0.742564) + (scaled\_ready\_soups\*-1.15405) + (scaled\_red\_div\_blush\_wine\*-0.0146232) + (scaled\_rice\*-0.47967) + (scaled\_roll\_products\*-0.33769) + (scaled\_rolls\_div\_buns\*0.337152) + (scaled\_root\_vegetables\*-0.0455957) + (scaled\_rubbing\_alcohol\*0.0424524) + (scaled\_rum\*0.282674) + (scaled\_salad\_dressing\*0.974617) + (scaled\_salt\*0.600637) + (scaled\_salty\_snack\*0.0838877) + (scaled\_sauces\*-0.577278) + (scaled\_sausage\*0.226528) + (scaled\_seasonal\_products\*-0.0772155) + (scaled\_semi\_res\_finished\_bread\*0.191115) + (scaled\_shopping\_bags\*0.798143) + (scaled\_skin\_care\*-0.592386) + (scaled\_sliced\_cheese\*0.0689548) + (scaled\_snack\_products\*1.22996) + (scaled\_soap\*1.98348) + (scaled\_soda\*1.53096) + (scaled\_soft\_cheese\*-0.212326) + (scaled\_softener\*0.428009) + (scaled\_sound\_storage\_medium\*0.350805) + (scaled\_soups\*0.138346) + (scaled\_sparkling\_wine\*0.0798227) + (scaled\_specialty\_bar\*-0.0437555) + (scaled\_specialty\_cheese\*0.394335) + (scaled\_specialty\_chocolate\*0.363516) + (scaled\_specialty\_fat\*-0.875686) + (scaled\_specialty\_vegetables\*0.965637) + (scaled\_spices\*-1.25745) + (scaled\_spread\_cheese\*-0.25512) + (scaled\_sugar\*-0.379199) + (scaled\_sweet\_spreads\*-0.186277) + (scaled\_syrup\*1.41724) + (scaled\_tea\*1.31787) + (scaled\_tidbits\*0.956129) + (scaled\_toilet\_cleaner\*0.844778) + (scaled\_tropical\_fruit\*-0.0775537) + (scaled\_turkey\*-0.149825) + (scaled\_UHT\_res\_milk\*0.167439) + (scaled\_vinegar\*1.10017) + (scaled\_waffles\*-0.0255795) + (scaled\_whipped\_div\_sour\_cream\*0.185511) + (scaled\_whisky\*3.20008) + (scaled\_white\_bread\*0.176767) + (scaled\_white\_wine\*0.353542) + (scaled\_whole\_milk\*-1.2875) + (scaled\_yogurt\*1.4479) + (scaled\_zwieback\*-0.186508) );

mapping\_layer\_output\_20 = tanh( 0.400017 + (scaled\_abrasive\_cleaner\*0.601139) + (scaled\_arti\_f\_\_sweetener\*2.18178) + (scaled\_baby\_cosmetics\*-0.214396) + (scaled\_baby\_food\*0.0561849) + (scaled\_bags\*-0.0395416) + (scaled\_baking\_powder\*-0.133595) + (scaled\_bathroom\_cleaner\*-0.216481) + (scaled\_beef\*0.155341) + (scaled\_berries\*-0.0957354) + (scaled\_beverages\*-0.161483) + (scaled\_bottled\_beer\*0.157338) + (scaled\_bottled\_water\*0.0979877) + (scaled\_brandy\*-0.496898) + (scaled\_brown\_bread\*-0.0409455) + (scaled\_butter\*-0.222334) + (scaled\_butter\_milk\*0.108734) + (scaled\_cake\_bar\*0.224237) + (scaled\_candles\*-0.300079) + (scaled\_candy\*-0.26098) + (scaled\_canned\_beer\*-0.720969) + (scaled\_canned\_fish\*-0.459192) + (scaled\_canned\_fruit\*-0.133719) + (scaled\_canned\_vegetables\*0.186084) + (scaled\_cat\_food\*-0.22706) + (scaled\_cereals\*-0.217225) + (scaled\_chewing\_gum\*-0.0514805) + (scaled\_chicken\*0.0923108) + (scaled\_chocolate\*0.0665407) + (scaled\_chocolate\_marshmallow\*-0.120548) + (scaled\_citrus\_fruit\*-0.00838759) + (scaled\_cleaner\*-0.19449) + (scaled\_cling\_film\_div\_bags\*0.188667) + (scaled\_cocoa\_drinks\*-0.595295) + (scaled\_coffee\*0.0196114) + (scaled\_condensed\_milk\*-0.149914) + (scaled\_cooking\_chocolate\*0.0513038) + (scaled\_cookware\*0.16282) + (scaled\_cream\*-0.700734) + (scaled\_cream\_cheese\*0.0866724) + (scaled\_curd\*-0.0890283) + (scaled\_curd\_cheese\*0.323991) + (scaled\_decalci\_fier\*-1.12462) + (scaled\_dental\_care\*-0.0114788) + (scaled\_dessert\*0.00609156) + (scaled\_detergent\*-0.134418) + (scaled\_dish\_cleaner\*-0.00490344) + (scaled\_dishes\*0.212099) + (scaled\_dog\_food\*0.169684) + (scaled\_domestic\_eggs\*-0.0777696) + (scaled\_female\_sanitary\_products\*-0.304251) + (scaled\_finished\_products\*0.0431477) + (scaled\_fish\*0.470438) + (scaled\_flour\*-0.132293) + (scaled\_flower\_\_seeds\_\*-0.0417079) + (scaled\_flower\_soil\_div\_fertilizer\*-0.526052) + (scaled\_frankfurter\*0.109924) + (scaled\_frozen\_chicken\*-0.00531904) + (scaled\_frozen\_dessert\*-0.123248) + (scaled\_frozen\_fish\*0.00624269) + (scaled\_frozen\_fruits\*0.324917) + (scaled\_frozen\_meals\*-0.297667) + (scaled\_frozen\_potato\_products\*-0.0783444) + (scaled\_frozen\_vegetables\*-0.0714644) + (scaled\_fruit\_div\_vegetable\_juice\*-0.278187) + (scaled\_grapes\*0.208197) + (scaled\_hair\_spray\*-0.394197) + (scaled\_ham\*-0.127421) + (scaled\_hamburger\_meat\*-0.0123567) + (scaled\_hard\_cheese\*-0.0179141) + (scaled\_herbs\*-0.0686179) + (scaled\_honey\*1.93905) + (scaled\_house\_keeping\_products\*0.33065) + (scaled\_hygiene\_articles\*-0.141589) + (scaled\_ice\_cream\*0.0410256) + (scaled\_instant\_coffee\*-0.0330267) + (scaled\_Instant\_food\_products\*0.412067) + (scaled\_jam\*-0.200032) + (scaled\_ketchup\*0.271194) + (scaled\_kitchen\_towels\*-0.252262) + (scaled\_kitchen\_utensil\*0.0198619) + (scaled\_light\_bulbs\*-0.306068) + (scaled\_liqueur\*-1.64893) + (scaled\_liquor\*-0.469633) + (scaled\_liquor\_\_appetizer\_\*-0.323146) + (scaled\_liver\_loaf\*0.315875) + (scaled\_long\_li\_fe\_bakery\_product\*0.0117375) + (scaled\_make\_up\_remover\*0.0392629) + (scaled\_male\_cosmetics\*0.544476) + (scaled\_margarine\*-0.277069) + (scaled\_mayonnaise\*-0.386941) + (scaled\_meat\*0.051886) + (scaled\_meat\_spreads\*0.878781) + (scaled\_misc\_\_beverages\*0.089068) + (scaled\_mustard\*0.249409) + (scaled\_napkins\*0.0427303) + (scaled\_ne\_wspapers\*-0.393018) + (scaled\_nut\_snack\*0.204587) + (scaled\_nuts\_div\_prunes\*0.0636636) + (scaled\_oil\*0.341088) + (scaled\_onions\*-0.162909) + (scaled\_organic\_products\*1.3173) + (scaled\_organic\_sausage\*0.107923) + (scaled\_other\_vegetables\*0.22919) + (scaled\_packaged\_fruit\_div\_vegetables\*0.0297656) + (scaled\_pasta\*-0.129664) + (scaled\_pastr\_y\*-0.0594488) + (scaled\_pet\_care\*0.427642) + (scaled\_photo\_div\_film\*0.47298) + (scaled\_pickled\_vegetables\*0.00227154) + (scaled\_pip\_fruit\*0.0294618) + (scaled\_popcorn\*-0.124749) + (scaled\_pork\*-0.112501) + (scaled\_pot\_plants\*-0.406937) + (scaled\_potato\_products\*0.699442) + (scaled\_preservation\_products\*-1.78558) + (scaled\_processed\_cheese\*-0.168851) + (scaled\_prosecco\*0.320926) + (scaled\_pudding\_powder\*-1.03396) + (scaled\_ready\_soups\*0.366818) + (scaled\_red\_div\_blush\_wine\*-0.321748) + (scaled\_rice\*0.477275) + (scaled\_roll\_products\*-0.000434951) + (scaled\_rolls\_div\_buns\*-0.891253) + (scaled\_root\_vegetables\*0.425343) + (scaled\_rubbing\_alcohol\*-0.165359) + (scaled\_rum\*-0.857713) + (scaled\_salad\_dressing\*0.454064) + (scaled\_salt\*-0.301457) + (scaled\_salty\_snack\*-0.0757071) + (scaled\_sauces\*-0.273983) + (scaled\_sausage\*-0.261624) + (scaled\_seasonal\_products\*-0.146076) + (scaled\_semi\_res\_finished\_bread\*-0.426516) + (scaled\_shopping\_bags\*-0.428616) + (scaled\_skin\_care\*-0.302664) + (scaled\_sliced\_cheese\*-0.0278154) + (scaled\_snack\_products\*1.17898) + (scaled\_soap\*0.142774) + (scaled\_soda\*1.25333) + (scaled\_soft\_cheese\*0.0959956) + (scaled\_softener\*-0.844714) + (scaled\_sound\_storage\_medium\*1.01559) + (scaled\_soups\*-0.180395) + (scaled\_sparkling\_wine\*0.0859385) + (scaled\_specialty\_bar\*-0.039204) + (scaled\_specialty\_cheese\*-0.0624127) + (scaled\_specialty\_chocolate\*0.0315756) + (scaled\_specialty\_fat\*0.517993) + (scaled\_specialty\_vegetables\*0.198956) + (scaled\_spices\*0.182222) + (scaled\_spread\_cheese\*0.136524) + (scaled\_sugar\*-0.0258261) + (scaled\_sweet\_spreads\*0.069864) + (scaled\_syrup\*0.0176412) + (scaled\_tea\*-0.475044) + (scaled\_tidbits\*-1.52218) + (scaled\_toilet\_cleaner\*0.279285) + (scaled\_tropical\_fruit\*-0.0730558) + (scaled\_turkey\*-0.325316) + (scaled\_UHT\_res\_milk\*0.0471123) + (scaled\_vinegar\*-0.327558) + (scaled\_waffles\*0.0535866) + (scaled\_whipped\_div\_sour\_cream\*-0.357671) + (scaled\_whisky\*0.242723) + (scaled\_white\_bread\*0.0607716) + (scaled\_white\_wine\*0.19531) + (scaled\_whole\_milk\*5.08262) + (scaled\_yogurt\*1.16708) + (scaled\_zwieback\*0.190005) );

mapping\_layer\_output\_21 = tanh( 0.168339 + (scaled\_abrasive\_cleaner\*0.150653) + (scaled\_arti\_f\_\_sweetener\*0.0798014) + (scaled\_baby\_cosmetics\*-0.143457) + (scaled\_baby\_food\*-0.330052) + (scaled\_bags\*0.107619) + (scaled\_baking\_powder\*0.330895) + (scaled\_bathroom\_cleaner\*-0.547418) + (scaled\_beef\*-0.235117) + (scaled\_berries\*0.22766) + (scaled\_beverages\*-0.224495) + (scaled\_bottled\_beer\*1.08224) + (scaled\_bottled\_water\*-0.575968) + (scaled\_brandy\*-0.29734) + (scaled\_brown\_bread\*0.0798298) + (scaled\_butter\*-0.237787) + (scaled\_butter\_milk\*-0.060111) + (scaled\_cake\_bar\*0.198479) + (scaled\_candles\*0.521088) + (scaled\_candy\*-0.0824878) + (scaled\_canned\_beer\*1.75702) + (scaled\_canned\_fish\*-0.602402) + (scaled\_canned\_fruit\*0.288893) + (scaled\_canned\_vegetables\*-0.115249) + (scaled\_cat\_food\*-0.0846014) + (scaled\_cereals\*0.105723) + (scaled\_chewing\_gum\*0.578037) + (scaled\_chicken\*-0.0271392) + (scaled\_chocolate\*0.00514296) + (scaled\_chocolate\_marshmallow\*-0.589367) + (scaled\_citrus\_fruit\*-0.920933) + (scaled\_cleaner\*0.281467) + (scaled\_cling\_film\_div\_bags\*-0.158342) + (scaled\_cocoa\_drinks\*0.79569) + (scaled\_coffee\*0.107601) + (scaled\_condensed\_milk\*0.293407) + (scaled\_cooking\_chocolate\*-0.585611) + (scaled\_cookware\*1.56374) + (scaled\_cream\*-0.584401) + (scaled\_cream\_cheese\*-0.143779) + (scaled\_curd\*-0.172217) + (scaled\_curd\_cheese\*-0.303654) + (scaled\_decalci\_fier\*0.240947) + (scaled\_dental\_care\*-0.776816) + (scaled\_dessert\*-0.198803) + (scaled\_detergent\*0.220526) + (scaled\_dish\_cleaner\*-0.387942) + (scaled\_dishes\*0.724818) + (scaled\_dog\_food\*0.15406) + (scaled\_domestic\_eggs\*0.144175) + (scaled\_female\_sanitary\_products\*0.198931) + (scaled\_finished\_products\*-0.249649) + (scaled\_fish\*0.321406) + (scaled\_flour\*-0.504606) + (scaled\_flower\_\_seeds\_\*-0.156917) + (scaled\_flower\_soil\_div\_fertilizer\*-0.689529) + (scaled\_frankfurter\*0.0697341) + (scaled\_frozen\_chicken\*0.212956) + (scaled\_frozen\_dessert\*-0.730382) + (scaled\_frozen\_fish\*-0.346302) + (scaled\_frozen\_fruits\*0.438002) + (scaled\_frozen\_meals\*0.0554779) + (scaled\_frozen\_potato\_products\*0.0770332) + (scaled\_frozen\_vegetables\*-0.180942) + (scaled\_fruit\_div\_vegetable\_juice\*0.213305) + (scaled\_grapes\*0.148626) + (scaled\_hair\_spray\*-0.747459) + (scaled\_ham\*-0.0686204) + (scaled\_hamburger\_meat\*-0.298491) + (scaled\_hard\_cheese\*-0.0555927) + (scaled\_herbs\*0.242705) + (scaled\_honey\*-0.582331) + (scaled\_house\_keeping\_products\*-0.128644) + (scaled\_hygiene\_articles\*0.053673) + (scaled\_ice\_cream\*0.144881) + (scaled\_instant\_coffee\*-0.203058) + (scaled\_Instant\_food\_products\*0.656164) + (scaled\_jam\*-0.626493) + (scaled\_ketchup\*-0.416981) + (scaled\_kitchen\_towels\*-0.461404) + (scaled\_kitchen\_utensil\*-0.171719) + (scaled\_light\_bulbs\*0.256574) + (scaled\_liqueur\*-0.687208) + (scaled\_liquor\*-0.168588) + (scaled\_liquor\_\_appetizer\_\*0.0700714) + (scaled\_liver\_loaf\*-0.0550277) + (scaled\_long\_li\_fe\_bakery\_product\*-0.220152) + (scaled\_make\_up\_remover\*-0.794867) + (scaled\_male\_cosmetics\*-0.127651) + (scaled\_margarine\*-0.296291) + (scaled\_mayonnaise\*-0.00694361) + (scaled\_meat\*0.177383) + (scaled\_meat\_spreads\*0.189693) + (scaled\_misc\_\_beverages\*-0.108245) + (scaled\_mustard\*-0.269333) + (scaled\_napkins\*0.247268) + (scaled\_ne\_wspapers\*-0.640027) + (scaled\_nut\_snack\*-0.885718) + (scaled\_nuts\_div\_prunes\*-1.31384) + (scaled\_oil\*0.390081) + (scaled\_onions\*-0.190699) + (scaled\_organic\_products\*-0.00431196) + (scaled\_organic\_sausage\*0.52231) + (scaled\_other\_vegetables\*-0.297343) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.410593) + (scaled\_pasta\*-0.358451) + (scaled\_pastr\_y\*-0.412318) + (scaled\_pet\_care\*0.0914776) + (scaled\_photo\_div\_film\*-0.381393) + (scaled\_pickled\_vegetables\*0.356083) + (scaled\_pip\_fruit\*-0.209745) + (scaled\_popcorn\*-0.194908) + (scaled\_pork\*0.425733) + (scaled\_pot\_plants\*-0.0936084) + (scaled\_potato\_products\*-0.0205295) + (scaled\_preservation\_products\*0.924786) + (scaled\_processed\_cheese\*0.0108604) + (scaled\_prosecco\*-0.0246952) + (scaled\_pudding\_powder\*-0.759812) + (scaled\_ready\_soups\*-4.21268) + (scaled\_red\_div\_blush\_wine\*0.129857) + (scaled\_rice\*-0.016836) + (scaled\_roll\_products\*-0.299145) + (scaled\_rolls\_div\_buns\*-0.27808) + (scaled\_root\_vegetables\*-1.07056) + (scaled\_rubbing\_alcohol\*-0.376966) + (scaled\_rum\*-0.498943) + (scaled\_salad\_dressing\*1.45896) + (scaled\_salt\*0.0769252) + (scaled\_salty\_snack\*-0.054949) + (scaled\_sauces\*-0.334314) + (scaled\_sausage\*-0.40783) + (scaled\_seasonal\_products\*-0.0299729) + (scaled\_semi\_res\_finished\_bread\*-0.254715) + (scaled\_shopping\_bags\*-0.704643) + (scaled\_skin\_care\*-0.775723) + (scaled\_sliced\_cheese\*-0.0332216) + (scaled\_snack\_products\*-0.442338) + (scaled\_soap\*0.382476) + (scaled\_soda\*-0.695381) + (scaled\_soft\_cheese\*-0.0816021) + (scaled\_softener\*-0.147754) + (scaled\_sound\_storage\_medium\*0.0817298) + (scaled\_soups\*0.161264) + (scaled\_sparkling\_wine\*-0.428584) + (scaled\_specialty\_bar\*-0.00643634) + (scaled\_specialty\_cheese\*-0.0970865) + (scaled\_specialty\_chocolate\*0.480209) + (scaled\_specialty\_fat\*-0.176517) + (scaled\_specialty\_vegetables\*-1.04392) + (scaled\_spices\*0.127237) + (scaled\_spread\_cheese\*-0.0356788) + (scaled\_sugar\*-0.105117) + (scaled\_sweet\_spreads\*0.736687) + (scaled\_syrup\*0.414089) + (scaled\_tea\*-0.13812) + (scaled\_tidbits\*-1.29998) + (scaled\_toilet\_cleaner\*-0.299175) + (scaled\_tropical\_fruit\*-0.207135) + (scaled\_turkey\*0.165825) + (scaled\_UHT\_res\_milk\*0.125614) + (scaled\_vinegar\*0.326052) + (scaled\_waffles\*-0.132974) + (scaled\_whipped\_div\_sour\_cream\*-0.128028) + (scaled\_whisky\*1.31833) + (scaled\_white\_bread\*0.0912362) + (scaled\_white\_wine\*-0.122177) + (scaled\_whole\_milk\*-2.23414) + (scaled\_yogurt\*-1.31223) + (scaled\_zwieback\*0.0376786) );

mapping\_layer\_output\_22 = tanh( -0.765968 + (scaled\_abrasive\_cleaner\*0.86235) + (scaled\_arti\_f\_\_sweetener\*-0.161057) + (scaled\_baby\_cosmetics\*-1.13267) + (scaled\_baby\_food\*0.134996) + (scaled\_bags\*-0.116116) + (scaled\_baking\_powder\*0.362617) + (scaled\_bathroom\_cleaner\*-0.362086) + (scaled\_beef\*-0.0713209) + (scaled\_berries\*0.311058) + (scaled\_beverages\*0.0146899) + (scaled\_bottled\_beer\*-0.232718) + (scaled\_bottled\_water\*-0.0856771) + (scaled\_brandy\*0.353103) + (scaled\_brown\_bread\*-0.246385) + (scaled\_butter\*0.00247932) + (scaled\_butter\_milk\*-0.853638) + (scaled\_cake\_bar\*-1.32466) + (scaled\_candles\*0.608204) + (scaled\_candy\*-0.0859232) + (scaled\_canned\_beer\*-2.36217) + (scaled\_canned\_fish\*0.646228) + (scaled\_canned\_fruit\*-0.532665) + (scaled\_canned\_vegetables\*-0.508873) + (scaled\_cat\_food\*-0.0130479) + (scaled\_cereals\*0.655372) + (scaled\_chewing\_gum\*0.122077) + (scaled\_chicken\*-0.48241) + (scaled\_chocolate\*-0.727637) + (scaled\_chocolate\_marshmallow\*0.234798) + (scaled\_citrus\_fruit\*0.130635) + (scaled\_cleaner\*-0.674015) + (scaled\_cling\_film\_div\_bags\*-0.0920718) + (scaled\_cocoa\_drinks\*0.928615) + (scaled\_coffee\*-1.03674) + (scaled\_condensed\_milk\*0.589295) + (scaled\_cooking\_chocolate\*1.87285) + (scaled\_cookware\*0.0527446) + (scaled\_cream\*-0.0135815) + (scaled\_cream\_cheese\*-0.424472) + (scaled\_curd\*-0.546466) + (scaled\_curd\_cheese\*-0.944328) + (scaled\_decalci\_fier\*1.63527) + (scaled\_dental\_care\*0.189276) + (scaled\_dessert\*-0.0647225) + (scaled\_detergent\*0.203297) + (scaled\_dish\_cleaner\*-0.869222) + (scaled\_dishes\*-0.169809) + (scaled\_dog\_food\*0.41856) + (scaled\_domestic\_eggs\*-0.154256) + (scaled\_female\_sanitary\_products\*0.243418) + (scaled\_finished\_products\*-0.138451) + (scaled\_fish\*-0.807226) + (scaled\_flour\*-0.742589) + (scaled\_flower\_\_seeds\_\*-0.34235) + (scaled\_flower\_soil\_div\_fertilizer\*-2.694) + (scaled\_frankfurter\*-0.171346) + (scaled\_frozen\_chicken\*0.164093) + (scaled\_frozen\_dessert\*0.494024) + (scaled\_frozen\_fish\*0.564992) + (scaled\_frozen\_fruits\*-0.145426) + (scaled\_frozen\_meals\*-0.446989) + (scaled\_frozen\_potato\_products\*-0.016091) + (scaled\_frozen\_vegetables\*0.060336) + (scaled\_fruit\_div\_vegetable\_juice\*-0.206772) + (scaled\_grapes\*0.0661345) + (scaled\_hair\_spray\*-2.50055) + (scaled\_ham\*-0.705063) + (scaled\_hamburger\_meat\*0.0274663) + (scaled\_hard\_cheese\*0.171989) + (scaled\_herbs\*0.250164) + (scaled\_honey\*-3.94539) + (scaled\_house\_keeping\_products\*-0.251709) + (scaled\_hygiene\_articles\*-0.807586) + (scaled\_ice\_cream\*-0.296413) + (scaled\_instant\_coffee\*-0.889731) + (scaled\_Instant\_food\_products\*-0.92003) + (scaled\_jam\*-0.189874) + (scaled\_ketchup\*-0.0360152) + (scaled\_kitchen\_towels\*0.42281) + (scaled\_kitchen\_utensil\*0.0782585) + (scaled\_light\_bulbs\*-0.622573) + (scaled\_liqueur\*1.03324) + (scaled\_liquor\*0.19729) + (scaled\_liquor\_\_appetizer\_\*0.389596) + (scaled\_liver\_loaf\*-0.103292) + (scaled\_long\_li\_fe\_bakery\_product\*0.317943) + (scaled\_make\_up\_remover\*-2.50647) + (scaled\_male\_cosmetics\*-3.88071) + (scaled\_margarine\*-0.120453) + (scaled\_mayonnaise\*-0.985149) + (scaled\_meat\*0.171913) + (scaled\_meat\_spreads\*1.18593) + (scaled\_misc\_\_beverages\*-0.0993767) + (scaled\_mustard\*0.821228) + (scaled\_napkins\*-0.458865) + (scaled\_ne\_wspapers\*0.281043) + (scaled\_nut\_snack\*-0.0538305) + (scaled\_nuts\_div\_prunes\*0.14234) + (scaled\_oil\*-0.206609) + (scaled\_onions\*0.268384) + (scaled\_organic\_products\*-1.58476) + (scaled\_organic\_sausage\*0.620601) + (scaled\_other\_vegetables\*-0.261905) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.204563) + (scaled\_pasta\*0.942832) + (scaled\_pastr\_y\*-0.385844) + (scaled\_pet\_care\*-0.582207) + (scaled\_photo\_div\_film\*0.463309) + (scaled\_pickled\_vegetables\*-0.384654) + (scaled\_pip\_fruit\*-0.00885499) + (scaled\_popcorn\*0.475752) + (scaled\_pork\*0.0326091) + (scaled\_pot\_plants\*-0.0262625) + (scaled\_potato\_products\*-1.1764) + (scaled\_preservation\_products\*-1.61961) + (scaled\_processed\_cheese\*-0.0422676) + (scaled\_prosecco\*0.472335) + (scaled\_pudding\_powder\*0.9772) + (scaled\_ready\_soups\*-0.430431) + (scaled\_red\_div\_blush\_wine\*-0.0507218) + (scaled\_rice\*0.204924) + (scaled\_roll\_products\*0.266183) + (scaled\_rolls\_div\_buns\*-3.25362) + (scaled\_root\_vegetables\*0.800544) + (scaled\_rubbing\_alcohol\*-0.27186) + (scaled\_rum\*-1.82034) + (scaled\_salad\_dressing\*0.372285) + (scaled\_salt\*0.493487) + (scaled\_salty\_snack\*0.0181718) + (scaled\_sauces\*0.502524) + (scaled\_sausage\*0.0179149) + (scaled\_seasonal\_products\*-0.209921) + (scaled\_semi\_res\_finished\_bread\*0.181089) + (scaled\_shopping\_bags\*-0.115606) + (scaled\_skin\_care\*-0.710992) + (scaled\_sliced\_cheese\*0.237622) + (scaled\_snack\_products\*0.252135) + (scaled\_soap\*0.205677) + (scaled\_soda\*-0.509976) + (scaled\_soft\_cheese\*0.504145) + (scaled\_softener\*0.284875) + (scaled\_sound\_storage\_medium\*-0.360959) + (scaled\_soups\*-0.120513) + (scaled\_sparkling\_wine\*-0.120464) + (scaled\_specialty\_bar\*-0.334835) + (scaled\_specialty\_cheese\*-0.855005) + (scaled\_specialty\_chocolate\*-0.097279) + (scaled\_specialty\_fat\*1.27812) + (scaled\_specialty\_vegetables\*1.29595) + (scaled\_spices\*-0.245816) + (scaled\_spread\_cheese\*-0.559996) + (scaled\_sugar\*0.19233) + (scaled\_sweet\_spreads\*-1.27874) + (scaled\_syrup\*0.375886) + (scaled\_tea\*-2.04343) + (scaled\_tidbits\*-3.57451) + (scaled\_toilet\_cleaner\*-0.529809) + (scaled\_tropical\_fruit\*-0.536017) + (scaled\_turkey\*0.068499) + (scaled\_UHT\_res\_milk\*0.0240787) + (scaled\_vinegar\*0.114453) + (scaled\_waffles\*-0.0505621) + (scaled\_whipped\_div\_sour\_cream\*-0.640885) + (scaled\_whisky\*-1.36393) + (scaled\_white\_bread\*0.364222) + (scaled\_white\_wine\*-0.343126) + (scaled\_whole\_milk\*-0.365383) + (scaled\_yogurt\*-0.242482) + (scaled\_zwieback\*0.405847) );

mapping\_layer\_output\_23 = tanh( -1.01942 + (scaled\_abrasive\_cleaner\*-0.0808384) + (scaled\_arti\_f\_\_sweetener\*0.17218) + (scaled\_baby\_cosmetics\*0.0814692) + (scaled\_baby\_food\*-0.313521) + (scaled\_bags\*-0.149302) + (scaled\_baking\_powder\*0.0998021) + (scaled\_bathroom\_cleaner\*0.360212) + (scaled\_beef\*0.150269) + (scaled\_berries\*-0.0754962) + (scaled\_beverages\*-0.0473848) + (scaled\_bottled\_beer\*0.557349) + (scaled\_bottled\_water\*-0.257568) + (scaled\_brandy\*0.184729) + (scaled\_brown\_bread\*-0.0968992) + (scaled\_butter\*0.104021) + (scaled\_butter\_milk\*0.168433) + (scaled\_cake\_bar\*0.141102) + (scaled\_candles\*0.192113) + (scaled\_candy\*-0.0543246) + (scaled\_canned\_beer\*-0.338047) + (scaled\_canned\_fish\*0.054088) + (scaled\_canned\_fruit\*0.103707) + (scaled\_canned\_vegetables\*-0.53451) + (scaled\_cat\_food\*-0.132469) + (scaled\_cereals\*-0.028243) + (scaled\_chewing\_gum\*-0.0235864) + (scaled\_chicken\*0.0731505) + (scaled\_chocolate\*0.019262) + (scaled\_chocolate\_marshmallow\*0.248524) + (scaled\_citrus\_fruit\*-0.0469471) + (scaled\_cleaner\*0.12259) + (scaled\_cling\_film\_div\_bags\*-0.0747107) + (scaled\_cocoa\_drinks\*-0.300589) + (scaled\_coffee\*-0.114054) + (scaled\_condensed\_milk\*-0.334191) + (scaled\_cooking\_chocolate\*-0.382231) + (scaled\_cookware\*-0.0532806) + (scaled\_cream\*-1.68934) + (scaled\_cream\_cheese\*-0.0782459) + (scaled\_curd\*0.0846932) + (scaled\_curd\_cheese\*0.224551) + (scaled\_decalci\_fier\*-0.660989) + (scaled\_dental\_care\*0.144425) + (scaled\_dessert\*0.0664363) + (scaled\_detergent\*0.12936) + (scaled\_dish\_cleaner\*-0.221584) + (scaled\_dishes\*-0.0352297) + (scaled\_dog\_food\*-0.0279668) + (scaled\_domestic\_eggs\*0.121818) + (scaled\_female\_sanitary\_products\*0.0849561) + (scaled\_finished\_products\*-0.130071) + (scaled\_fish\*0.095299) + (scaled\_flour\*-0.109648) + (scaled\_flower\_\_seeds\_\*-0.681207) + (scaled\_flower\_soil\_div\_fertilizer\*0.602363) + (scaled\_frankfurter\*-0.0371532) + (scaled\_frozen\_chicken\*-0.805088) + (scaled\_frozen\_dessert\*0.0498795) + (scaled\_frozen\_fish\*0.243829) + (scaled\_frozen\_fruits\*0.377933) + (scaled\_frozen\_meals\*0.0636912) + (scaled\_frozen\_potato\_products\*-0.375702) + (scaled\_frozen\_vegetables\*0.0976617) + (scaled\_fruit\_div\_vegetable\_juice\*0.10537) + (scaled\_grapes\*0.212642) + (scaled\_hair\_spray\*0.59984) + (scaled\_ham\*0.0188373) + (scaled\_hamburger\_meat\*0.00102304) + (scaled\_hard\_cheese\*-0.0303892) + (scaled\_herbs\*0.134002) + (scaled\_honey\*-1.80185) + (scaled\_house\_keeping\_products\*0.0990627) + (scaled\_hygiene\_articles\*0.094925) + (scaled\_ice\_cream\*0.142095) + (scaled\_instant\_coffee\*0.0491495) + (scaled\_Instant\_food\_products\*0.381558) + (scaled\_jam\*-0.120813) + (scaled\_ketchup\*-0.292965) + (scaled\_kitchen\_towels\*0.174199) + (scaled\_kitchen\_utensil\*-1.05836) + (scaled\_light\_bulbs\*-0.150703) + (scaled\_liqueur\*0.303566) + (scaled\_liquor\*0.181217) + (scaled\_liquor\_\_appetizer\_\*-0.140735) + (scaled\_liver\_loaf\*-0.201153) + (scaled\_long\_li\_fe\_bakery\_product\*-0.00067871) + (scaled\_make\_up\_remover\*0.0267749) + (scaled\_male\_cosmetics\*0.170927) + (scaled\_margarine\*0.120365) + (scaled\_mayonnaise\*0.00853657) + (scaled\_meat\*-0.0811481) + (scaled\_meat\_spreads\*-0.199774) + (scaled\_misc\_\_beverages\*0.163801) + (scaled\_mustard\*0.0112554) + (scaled\_napkins\*-0.00701157) + (scaled\_ne\_wspapers\*-0.123539) + (scaled\_nut\_snack\*-0.125364) + (scaled\_nuts\_div\_prunes\*0.302665) + (scaled\_oil\*0.0644904) + (scaled\_onions\*-0.0162371) + (scaled\_organic\_products\*0.0647578) + (scaled\_organic\_sausage\*0.507607) + (scaled\_other\_vegetables\*-0.397869) + (scaled\_packaged\_fruit\_div\_vegetables\*0.0936281) + (scaled\_pasta\*0.0942542) + (scaled\_pastr\_y\*0.198585) + (scaled\_pet\_care\*0.151732) + (scaled\_photo\_div\_film\*0.136167) + (scaled\_pickled\_vegetables\*-0.00802538) + (scaled\_pip\_fruit\*0.0962455) + (scaled\_popcorn\*-0.196515) + (scaled\_pork\*-0.0520282) + (scaled\_pot\_plants\*-0.0997261) + (scaled\_potato\_products\*-0.254644) + (scaled\_preservation\_products\*0.177551) + (scaled\_processed\_cheese\*0.0400429) + (scaled\_prosecco\*0.538073) + (scaled\_pudding\_powder\*-0.36336) + (scaled\_ready\_soups\*-0.105106) + (scaled\_red\_div\_blush\_wine\*0.01604) + (scaled\_rice\*0.502472) + (scaled\_roll\_products\*0.309165) + (scaled\_rolls\_div\_buns\*0.305636) + (scaled\_root\_vegetables\*-0.072317) + (scaled\_rubbing\_alcohol\*-0.0249597) + (scaled\_rum\*-0.375022) + (scaled\_salad\_dressing\*0.392356) + (scaled\_salt\*0.0964543) + (scaled\_salty\_snack\*0.066306) + (scaled\_sauces\*-0.645826) + (scaled\_sausage\*-0.0194581) + (scaled\_seasonal\_products\*-0.123735) + (scaled\_semi\_res\_finished\_bread\*0.13157) + (scaled\_shopping\_bags\*0.0835863) + (scaled\_skin\_care\*0.257217) + (scaled\_sliced\_cheese\*0.167247) + (scaled\_snack\_products\*-0.946277) + (scaled\_soap\*-0.269453) + (scaled\_soda\*0.303552) + (scaled\_soft\_cheese\*0.0318049) + (scaled\_softener\*-0.365203) + (scaled\_sound\_storage\_medium\*1.77851) + (scaled\_soups\*-0.0296803) + (scaled\_sparkling\_wine\*-0.0298215) + (scaled\_specialty\_bar\*-0.113878) + (scaled\_specialty\_cheese\*0.199162) + (scaled\_specialty\_chocolate\*0.206298) + (scaled\_specialty\_fat\*-0.444346) + (scaled\_specialty\_vegetables\*0.185948) + (scaled\_spices\*0.20901) + (scaled\_spread\_cheese\*0.369479) + (scaled\_sugar\*0.0517179) + (scaled\_sweet\_spreads\*0.266269) + (scaled\_syrup\*0.0248058) + (scaled\_tea\*-0.0468332) + (scaled\_tidbits\*0.279499) + (scaled\_toilet\_cleaner\*0.287141) + (scaled\_tropical\_fruit\*0.106738) + (scaled\_turkey\*0.0263078) + (scaled\_UHT\_res\_milk\*0.0151762) + (scaled\_vinegar\*-0.154945) + (scaled\_waffles\*0.28646) + (scaled\_whipped\_div\_sour\_cream\*0.391519) + (scaled\_whisky\*-0.442815) + (scaled\_white\_bread\*0.136618) + (scaled\_white\_wine\*-0.085656) + (scaled\_whole\_milk\*-0.0329625) + (scaled\_yogurt\*0.086752) + (scaled\_zwieback\*-0.000518882) );

mapping\_layer\_output\_24 = tanh( 0.0278116 + (scaled\_abrasive\_cleaner\*-0.417316) + (scaled\_arti\_f\_\_sweetener\*1.80863) + (scaled\_baby\_cosmetics\*0.928399) + (scaled\_baby\_food\*0.458856) + (scaled\_bags\*-0.171609) + (scaled\_baking\_powder\*-0.0937709) + (scaled\_bathroom\_cleaner\*0.989533) + (scaled\_beef\*-0.207004) + (scaled\_berries\*0.224895) + (scaled\_beverages\*-0.117535) + (scaled\_bottled\_beer\*-0.852705) + (scaled\_bottled\_water\*-0.529634) + (scaled\_brandy\*0.534993) + (scaled\_brown\_bread\*0.181968) + (scaled\_butter\*-0.151015) + (scaled\_butter\_milk\*0.0727743) + (scaled\_cake\_bar\*-0.150369) + (scaled\_candles\*0.372179) + (scaled\_candy\*-0.129447) + (scaled\_canned\_beer\*-1.3981) + (scaled\_canned\_fish\*0.0520684) + (scaled\_canned\_fruit\*-0.333687) + (scaled\_canned\_vegetables\*0.484628) + (scaled\_cat\_food\*0.400424) + (scaled\_cereals\*1.24857) + (scaled\_chewing\_gum\*-0.0947498) + (scaled\_chicken\*-0.0224705) + (scaled\_chocolate\*0.351619) + (scaled\_chocolate\_marshmallow\*-0.31422) + (scaled\_citrus\_fruit\*-0.0598951) + (scaled\_cleaner\*0.976553) + (scaled\_cling\_film\_div\_bags\*0.0837106) + (scaled\_cocoa\_drinks\*0.651541) + (scaled\_coffee\*0.0782169) + (scaled\_condensed\_milk\*-0.316854) + (scaled\_cooking\_chocolate\*-0.256229) + (scaled\_cookware\*0.0120363) + (scaled\_cream\*0.729456) + (scaled\_cream\_cheese\*0.0196328) + (scaled\_curd\*-0.157986) + (scaled\_curd\_cheese\*0.426583) + (scaled\_decalci\_fier\*-0.397569) + (scaled\_dental\_care\*-0.288597) + (scaled\_dessert\*0.227224) + (scaled\_detergent\*-0.325953) + (scaled\_dish\_cleaner\*-0.0368532) + (scaled\_dishes\*-0.323938) + (scaled\_dog\_food\*-0.0354193) + (scaled\_domestic\_eggs\*-0.33297) + (scaled\_female\_sanitary\_products\*-0.0928778) + (scaled\_finished\_products\*0.566038) + (scaled\_fish\*1.52433) + (scaled\_flour\*-0.621327) + (scaled\_flower\_\_seeds\_\*-0.435834) + (scaled\_flower\_soil\_div\_fertilizer\*-0.0663992) + (scaled\_frankfurter\*0.159223) + (scaled\_frozen\_chicken\*0.262045) + (scaled\_frozen\_dessert\*-0.0594723) + (scaled\_frozen\_fish\*-0.174535) + (scaled\_frozen\_fruits\*-2.72589) + (scaled\_frozen\_meals\*0.0753459) + (scaled\_frozen\_potato\_products\*-0.669486) + (scaled\_frozen\_vegetables\*0.0370251) + (scaled\_fruit\_div\_vegetable\_juice\*-0.0191359) + (scaled\_grapes\*0.130093) + (scaled\_hair\_spray\*-0.294951) + (scaled\_ham\*0.346958) + (scaled\_hamburger\_meat\*-0.101109) + (scaled\_hard\_cheese\*-0.168123) + (scaled\_herbs\*-0.0430903) + (scaled\_honey\*-1.14132) + (scaled\_house\_keeping\_products\*-0.430091) + (scaled\_hygiene\_articles\*0.194799) + (scaled\_ice\_cream\*-0.0390129) + (scaled\_instant\_coffee\*-0.529874) + (scaled\_Instant\_food\_products\*-0.75129) + (scaled\_jam\*-0.380803) + (scaled\_ketchup\*0.301657) + (scaled\_kitchen\_towels\*-0.139536) + (scaled\_kitchen\_utensil\*-1.00555) + (scaled\_light\_bulbs\*0.38287) + (scaled\_liqueur\*0.436863) + (scaled\_liquor\*-0.594134) + (scaled\_liquor\_\_appetizer\_\*0.728156) + (scaled\_liver\_loaf\*-0.243604) + (scaled\_long\_li\_fe\_bakery\_product\*0.129088) + (scaled\_make\_up\_remover\*2.05781) + (scaled\_male\_cosmetics\*0.119627) + (scaled\_margarine\*0.14706) + (scaled\_mayonnaise\*0.537004) + (scaled\_meat\*-0.100594) + (scaled\_meat\_spreads\*-0.152832) + (scaled\_misc\_\_beverages\*0.206384) + (scaled\_mustard\*0.125138) + (scaled\_napkins\*0.0875465) + (scaled\_ne\_wspapers\*-0.000444921) + (scaled\_nut\_snack\*-0.189147) + (scaled\_nuts\_div\_prunes\*0.964328) + (scaled\_oil\*-0.0602395) + (scaled\_onions\*0.0639631) + (scaled\_organic\_products\*-0.106259) + (scaled\_organic\_sausage\*1.22428) + (scaled\_other\_vegetables\*-0.672418) + (scaled\_packaged\_fruit\_div\_vegetables\*-0.44041) + (scaled\_pasta\*-0.116117) + (scaled\_pastr\_y\*0.398823) + (scaled\_pet\_care\*-0.394937) + (scaled\_photo\_div\_film\*-0.145381) + (scaled\_pickled\_vegetables\*0.313747) + (scaled\_pip\_fruit\*0.0677523) + (scaled\_popcorn\*0.405136) + (scaled\_pork\*0.284437) + (scaled\_pot\_plants\*0.210734) + (scaled\_potato\_products\*0.332874) + (scaled\_preservation\_products\*-0.430228) + (scaled\_processed\_cheese\*-0.0131782) + (scaled\_prosecco\*-0.480069) + (scaled\_pudding\_powder\*-0.0553473) + (scaled\_ready\_soups\*0.55437) + (scaled\_red\_div\_blush\_wine\*0.300086) + (scaled\_rice\*0.473374) + (scaled\_roll\_products\*0.326881) + (scaled\_rolls\_div\_buns\*0.422217) + (scaled\_root\_vegetables\*-0.102297) + (scaled\_rubbing\_alcohol\*1.56079) + (scaled\_rum\*0.0730971) + (scaled\_salad\_dressing\*2.14953) + (scaled\_salt\*0.487817) + (scaled\_salty\_snack\*0.209749) + (scaled\_sauces\*-0.316341) + (scaled\_sausage\*-0.0243908) + (scaled\_seasonal\_products\*-0.437688) + (scaled\_semi\_res\_finished\_bread\*0.274423) + (scaled\_shopping\_bags\*-0.123395) + (scaled\_skin\_care\*0.319608) + (scaled\_sliced\_cheese\*-0.00682332) + (scaled\_snack\_products\*-1.65283) + (scaled\_soap\*0.595975) + (scaled\_soda\*-7.99078) + (scaled\_soft\_cheese\*0.0142039) + (scaled\_softener\*0.856276) + (scaled\_sound\_storage\_medium\*-0.360634) + (scaled\_soups\*-0.0765553) + (scaled\_sparkling\_wine\*-0.187045) + (scaled\_specialty\_bar\*-0.136138) + (scaled\_specialty\_cheese\*0.344874) + (scaled\_specialty\_chocolate\*-0.0263033) + (scaled\_specialty\_fat\*-0.0420621) + (scaled\_specialty\_vegetables\*0.276653) + (scaled\_spices\*-0.0260988) + (scaled\_spread\_cheese\*0.353558) + (scaled\_sugar\*-0.100694) + (scaled\_sweet\_spreads\*0.310439) + (scaled\_syrup\*-0.10396) + (scaled\_tea\*-0.636021) + (scaled\_tidbits\*1.41807) + (scaled\_toilet\_cleaner\*0.624321) + (scaled\_tropical\_fruit\*0.246426) + (scaled\_turkey\*0.0454992) + (scaled\_UHT\_res\_milk\*-0.0559454) + (scaled\_vinegar\*-0.845365) + (scaled\_waffles\*0.210733) + (scaled\_whipped\_div\_sour\_cream\*0.334879) + (scaled\_whisky\*1.18331) + (scaled\_white\_bread\*-0.0871635) + (scaled\_white\_wine\*-0.270813) + (scaled\_whole\_milk\*-1.30473) + (scaled\_yogurt\*0.321648) + (scaled\_zwieback\*0.29614) );

bottle\_neck\_layer\_output\_0 = ( -0.495534 + (mapping\_layer\_output\_0\*-1.87372) + (mapping\_layer\_output\_1\*0.972003) + (mapping\_layer\_output\_2\*-1.71424) + (mapping\_layer\_output\_3\*-1.80389) + (mapping\_layer\_output\_4\*-1.99228) + (mapping\_layer\_output\_5\*0.93551) + (mapping\_layer\_output\_6\*-1.68425) + (mapping\_layer\_output\_7\*0.467345) + (mapping\_layer\_output\_8\*1.82233) + (mapping\_layer\_output\_9\*1.85857) + (mapping\_layer\_output\_10\*-0.196205) + (mapping\_layer\_output\_11\*2.30374) + (mapping\_layer\_output\_12\*-0.408177) + (mapping\_layer\_output\_13\*-2.14381) + (mapping\_layer\_output\_14\*-0.0283186) + (mapping\_layer\_output\_15\*-1.07876) + (mapping\_layer\_output\_16\*1.67067) + (mapping\_layer\_output\_17\*-0.816353) + (mapping\_layer\_output\_18\*1.53347) + (mapping\_layer\_output\_19\*-0.760754) + (mapping\_layer\_output\_20\*-1.16499) + (mapping\_layer\_output\_21\*-0.085162) + (mapping\_layer\_output\_22\*1.01588) + (mapping\_layer\_output\_23\*-1.91631) + (mapping\_layer\_output\_24\*1.83105) );

bottle\_neck\_layer\_output\_1 = ( -0.00573482 + (mapping\_layer\_output\_0\*0.476625) + (mapping\_layer\_output\_1\*1.34362) + (mapping\_layer\_output\_2\*1.34498) + (mapping\_layer\_output\_3\*-1.59556) + (mapping\_layer\_output\_4\*0.773371) + (mapping\_layer\_output\_5\*-0.821665) + (mapping\_layer\_output\_6\*0.744368) + (mapping\_layer\_output\_7\*2.04469) + (mapping\_layer\_output\_8\*-0.265644) + (mapping\_layer\_output\_9\*1.19822) + (mapping\_layer\_output\_10\*-2.21999) + (mapping\_layer\_output\_11\*-0.816367) + (mapping\_layer\_output\_12\*1.85262) + (mapping\_layer\_output\_13\*-2.42215) + (mapping\_layer\_output\_14\*-1.55531) + (mapping\_layer\_output\_15\*-1.7163) + (mapping\_layer\_output\_16\*0.200037) + (mapping\_layer\_output\_17\*-1.18014) + (mapping\_layer\_output\_18\*-0.675712) + (mapping\_layer\_output\_19\*0.847719) + (mapping\_layer\_output\_20\*2.09916) + (mapping\_layer\_output\_21\*-2.02253) + (mapping\_layer\_output\_22\*0.649136) + (mapping\_layer\_output\_23\*2.06134) + (mapping\_layer\_output\_24\*0.449476) );

bottle\_neck\_layer\_output\_2 = ( -0.725537 + (mapping\_layer\_output\_0\*0.103615) + (mapping\_layer\_output\_1\*-2.49639) + (mapping\_layer\_output\_2\*-0.61564) + (mapping\_layer\_output\_3\*2.40687) + (mapping\_layer\_output\_4\*-1.03218) + (mapping\_layer\_output\_5\*2.69805) + (mapping\_layer\_output\_6\*0.322163) + (mapping\_layer\_output\_7\*-0.577679) + (mapping\_layer\_output\_8\*-0.48513) + (mapping\_layer\_output\_9\*-1.45335) + (mapping\_layer\_output\_10\*1.21175) + (mapping\_layer\_output\_11\*-0.625677) + (mapping\_layer\_output\_12\*0.729299) + (mapping\_layer\_output\_13\*1.15507) + (mapping\_layer\_output\_14\*-1.43193) + (mapping\_layer\_output\_15\*1.82388) + (mapping\_layer\_output\_16\*0.714865) + (mapping\_layer\_output\_17\*-1.28378) + (mapping\_layer\_output\_18\*1.98345) + (mapping\_layer\_output\_19\*-1.47512) + (mapping\_layer\_output\_20\*0.731786) + (mapping\_layer\_output\_21\*-1.96555) + (mapping\_layer\_output\_22\*0.58553) + (mapping\_layer\_output\_23\*0.113943) + (mapping\_layer\_output\_24\*-0.762845) );

demapping\_layer\_output\_0 = tanh( -3.87079 + (bottle\_neck\_layer\_output\_0\*0.12326) + (bottle\_neck\_layer\_output\_1\*-0.263387) + (bottle\_neck\_layer\_output\_2\*-1.1157) );

demapping\_layer\_output\_1 = tanh( 3.37798 + (bottle\_neck\_layer\_output\_0\*0.667078) + (bottle\_neck\_layer\_output\_1\*-2.28426) + (bottle\_neck\_layer\_output\_2\*3.27011) );

demapping\_layer\_output\_2 = tanh( -0.925883 + (bottle\_neck\_layer\_output\_0\*0.0837145) + (bottle\_neck\_layer\_output\_1\*0.575808) + (bottle\_neck\_layer\_output\_2\*0.408116) );

demapping\_layer\_output\_3 = tanh( 2.96836 + (bottle\_neck\_layer\_output\_0\*-0.336841) + (bottle\_neck\_layer\_output\_1\*2.71129) + (bottle\_neck\_layer\_output\_2\*-3.1372) );

demapping\_layer\_output\_4 = tanh( 5.62386 + (bottle\_neck\_layer\_output\_0\*0.761186) + (bottle\_neck\_layer\_output\_1\*1.22121) + (bottle\_neck\_layer\_output\_2\*1.25934) );

demapping\_layer\_output\_5 = tanh( 4.06935 + (bottle\_neck\_layer\_output\_0\*-1.6297) + (bottle\_neck\_layer\_output\_1\*-0.109787) + (bottle\_neck\_layer\_output\_2\*-1.79267) );

demapping\_layer\_output\_6 = tanh( 5.15232 + (bottle\_neck\_layer\_output\_0\*-1.44023) + (bottle\_neck\_layer\_output\_1\*-0.0442045) + (bottle\_neck\_layer\_output\_2\*-0.19086) );

demapping\_layer\_output\_7 = tanh( 3.92873 + (bottle\_neck\_layer\_output\_0\*-0.0964311) + (bottle\_neck\_layer\_output\_1\*-0.372089) + (bottle\_neck\_layer\_output\_2\*0.0329811) );

demapping\_layer\_output\_8 = tanh( 0.998328 + (bottle\_neck\_layer\_output\_0\*-5.51737) + (bottle\_neck\_layer\_output\_1\*0.815205) + (bottle\_neck\_layer\_output\_2\*2.08283) );

demapping\_layer\_output\_9 = tanh( 5.80789 + (bottle\_neck\_layer\_output\_0\*-0.53857) + (bottle\_neck\_layer\_output\_1\*-2.49114) + (bottle\_neck\_layer\_output\_2\*-0.0261194) );

demapping\_layer\_output\_10 = tanh( 3.69885 + (bottle\_neck\_layer\_output\_0\*-0.338006) + (bottle\_neck\_layer\_output\_1\*1.10594) + (bottle\_neck\_layer\_output\_2\*-2.06283) );

demapping\_layer\_output\_11 = tanh( 3.58611 + (bottle\_neck\_layer\_output\_0\*0.49352) + (bottle\_neck\_layer\_output\_1\*0.876) + (bottle\_neck\_layer\_output\_2\*1.35658) );

demapping\_layer\_output\_12 = tanh( 3.89314 + (bottle\_neck\_layer\_output\_0\*-0.169118) + (bottle\_neck\_layer\_output\_1\*-1.10036) + (bottle\_neck\_layer\_output\_2\*-0.954784) );

demapping\_layer\_output\_13 = tanh( 6.17558 + (bottle\_neck\_layer\_output\_0\*-4.54437) + (bottle\_neck\_layer\_output\_1\*0.0378465) + (bottle\_neck\_layer\_output\_2\*0.951461) );

demapping\_layer\_output\_14 = tanh( 5.70251 + (bottle\_neck\_layer\_output\_0\*-1.36345) + (bottle\_neck\_layer\_output\_1\*0.387096) + (bottle\_neck\_layer\_output\_2\*-2.47729) );

demapping\_layer\_output\_15 = tanh( 4.91557 + (bottle\_neck\_layer\_output\_0\*0.302152) + (bottle\_neck\_layer\_output\_1\*0.0277313) + (bottle\_neck\_layer\_output\_2\*0.829372) );

demapping\_layer\_output\_16 = tanh( -5.02444 + (bottle\_neck\_layer\_output\_0\*0.375117) + (bottle\_neck\_layer\_output\_1\*0.832163) + (bottle\_neck\_layer\_output\_2\*1.77106) );

demapping\_layer\_output\_17 = tanh( 2.7833 + (bottle\_neck\_layer\_output\_0\*3.12663) + (bottle\_neck\_layer\_output\_1\*-0.587198) + (bottle\_neck\_layer\_output\_2\*-1.27389) );

demapping\_layer\_output\_18 = tanh( 6.46911 + (bottle\_neck\_layer\_output\_0\*2.04041) + (bottle\_neck\_layer\_output\_1\*0.827278) + (bottle\_neck\_layer\_output\_2\*-0.947316) );

demapping\_layer\_output\_19 = tanh( 5.58006 + (bottle\_neck\_layer\_output\_0\*-0.037001) + (bottle\_neck\_layer\_output\_1\*-0.0332918) + (bottle\_neck\_layer\_output\_2\*-0.0840894) );

demapping\_layer\_output\_20 = tanh( 4.86115 + (bottle\_neck\_layer\_output\_0\*-1.43016) + (bottle\_neck\_layer\_output\_1\*1.73361) + (bottle\_neck\_layer\_output\_2\*-1.07034) );

demapping\_layer\_output\_21 = tanh( -7.76011 + (bottle\_neck\_layer\_output\_0\*-2.35591) + (bottle\_neck\_layer\_output\_1\*1.55021) + (bottle\_neck\_layer\_output\_2\*-0.190097) );

demapping\_layer\_output\_22 = tanh( 5.5452 + (bottle\_neck\_layer\_output\_0\*-0.70628) + (bottle\_neck\_layer\_output\_1\*0.990536) + (bottle\_neck\_layer\_output\_2\*-1.46376) );

demapping\_layer\_output\_23 = tanh( -5.73962 + (bottle\_neck\_layer\_output\_0\*-0.546385) + (bottle\_neck\_layer\_output\_1\*-5.32063) + (bottle\_neck\_layer\_output\_2\*0.285638) );

demapping\_layer\_output\_24 = tanh( -3.75138 + (bottle\_neck\_layer\_output\_0\*0.135817) + (bottle\_neck\_layer\_output\_1\*6.61865) + (bottle\_neck\_layer\_output\_2\*-2.82881) );

output\_layer\_output\_0 = logistic( -0.85006 + (demapping\_layer\_output\_0\*-3.26369) + (demapping\_layer\_output\_1\*-1.62861) + (demapping\_layer\_output\_2\*1.56588) + (demapping\_layer\_output\_3\*1.9513) + (demapping\_layer\_output\_4\*0.92577) + (demapping\_layer\_output\_5\*-1.02761) + (demapping\_layer\_output\_6\*-2.02681) + (demapping\_layer\_output\_7\*-1.09204) + (demapping\_layer\_output\_8\*-3.02622) + (demapping\_layer\_output\_9\*2.47881) + (demapping\_layer\_output\_10\*-1.28571) + (demapping\_layer\_output\_11\*-1.14972) + (demapping\_layer\_output\_12\*-0.785207) + (demapping\_layer\_output\_13\*1.06674) + (demapping\_layer\_output\_14\*-5.26839) + (demapping\_layer\_output\_15\*-0.0173781) + (demapping\_layer\_output\_16\*0.626271) + (demapping\_layer\_output\_17\*0.690312) + (demapping\_layer\_output\_18\*0.336223) + (demapping\_layer\_output\_19\*-1.46078) + (demapping\_layer\_output\_20\*1.58369) + (demapping\_layer\_output\_21\*0.655976) + (demapping\_layer\_output\_22\*-1.20818) + (demapping\_layer\_output\_23\*2.24505) + (demapping\_layer\_output\_24\*0.00526402) );

output\_layer\_output\_1 = logistic( -1.55226 + (demapping\_layer\_output\_0\*-0.384267) + (demapping\_layer\_output\_1\*-2.26332) + (demapping\_layer\_output\_2\*0.0887055) + (demapping\_layer\_output\_3\*0.301023) + (demapping\_layer\_output\_4\*0.195986) + (demapping\_layer\_output\_5\*-0.14759) + (demapping\_layer\_output\_6\*-0.375189) + (demapping\_layer\_output\_7\*-1.87447) + (demapping\_layer\_output\_8\*0.580782) + (demapping\_layer\_output\_9\*3.72871) + (demapping\_layer\_output\_10\*-1.0447) + (demapping\_layer\_output\_11\*1.08942) + (demapping\_layer\_output\_12\*-1.29803) + (demapping\_layer\_output\_13\*0.226122) + (demapping\_layer\_output\_14\*-0.492964) + (demapping\_layer\_output\_15\*0.19097) + (demapping\_layer\_output\_16\*3.50084) + (demapping\_layer\_output\_17\*1.16293) + (demapping\_layer\_output\_18\*0.662571) + (demapping\_layer\_output\_19\*-2.08495) + (demapping\_layer\_output\_20\*-0.363951) + (demapping\_layer\_output\_21\*0.384657) + (demapping\_layer\_output\_22\*-1.42794) + (demapping\_layer\_output\_23\*0.498726) + (demapping\_layer\_output\_24\*0.713657) );

output\_layer\_output\_2 = logistic( -1.20506 + (demapping\_layer\_output\_0\*1.86456) + (demapping\_layer\_output\_1\*0.113467) + (demapping\_layer\_output\_2\*0.968653) + (demapping\_layer\_output\_3\*-0.64505) + (demapping\_layer\_output\_4\*-1.07239) + (demapping\_layer\_output\_5\*-1.30866) + (demapping\_layer\_output\_6\*-0.454185) + (demapping\_layer\_output\_7\*-0.70902) + (demapping\_layer\_output\_8\*2.12933) + (demapping\_layer\_output\_9\*-0.102527) + (demapping\_layer\_output\_10\*-1.15424) + (demapping\_layer\_output\_11\*2.12011) + (demapping\_layer\_output\_12\*-3.40383) + (demapping\_layer\_output\_13\*0.206103) + (demapping\_layer\_output\_14\*-1.02962) + (demapping\_layer\_output\_15\*-1.2334) + (demapping\_layer\_output\_16\*1.16316) + (demapping\_layer\_output\_17\*3.64962) + (demapping\_layer\_output\_18\*-0.620002) + (demapping\_layer\_output\_19\*-1.80904) + (demapping\_layer\_output\_20\*-0.768663) + (demapping\_layer\_output\_21\*0.295903) + (demapping\_layer\_output\_22\*-1.15485) + (demapping\_layer\_output\_23\*0.747183) + (demapping\_layer\_output\_24\*-0.0702615) );

output\_layer\_output\_3 = logistic( -1.45265 + (demapping\_layer\_output\_0\*-1.53331) + (demapping\_layer\_output\_1\*-2.28544) + (demapping\_layer\_output\_2\*4.65966) + (demapping\_layer\_output\_3\*-1.42767) + (demapping\_layer\_output\_4\*-0.154997) + (demapping\_layer\_output\_5\*-5.15885) + (demapping\_layer\_output\_6\*-4.82455) + (demapping\_layer\_output\_7\*-1.38516) + (demapping\_layer\_output\_8\*0.128855) + (demapping\_layer\_output\_9\*-1.03944) + (demapping\_layer\_output\_10\*-1.32836) + (demapping\_layer\_output\_11\*-0.279009) + (demapping\_layer\_output\_12\*-3.39174) + (demapping\_layer\_output\_13\*-0.449072) + (demapping\_layer\_output\_14\*-0.380931) + (demapping\_layer\_output\_15\*0.479477) + (demapping\_layer\_output\_16\*0.746343) + (demapping\_layer\_output\_17\*-0.65111) + (demapping\_layer\_output\_18\*-0.781666) + (demapping\_layer\_output\_19\*-1.62322) + (demapping\_layer\_output\_20\*0.522689) + (demapping\_layer\_output\_21\*0.186531) + (demapping\_layer\_output\_22\*-1.56814) + (demapping\_layer\_output\_23\*1.03623) + (demapping\_layer\_output\_24\*-0.457809) );

output\_layer\_output\_4 = logistic( -1.03353 + (demapping\_layer\_output\_0\*-0.105666) + (demapping\_layer\_output\_1\*0.319846) + (demapping\_layer\_output\_2\*0.881418) + (demapping\_layer\_output\_3\*-0.592003) + (demapping\_layer\_output\_4\*-0.291588) + (demapping\_layer\_output\_5\*-1.07778) + (demapping\_layer\_output\_6\*-0.833005) + (demapping\_layer\_output\_7\*-1.55293) + (demapping\_layer\_output\_8\*-0.271419) + (demapping\_layer\_output\_9\*-0.489689) + (demapping\_layer\_output\_10\*-0.885375) + (demapping\_layer\_output\_11\*-0.25949) + (demapping\_layer\_output\_12\*-1.02239) + (demapping\_layer\_output\_13\*-0.36755) + (demapping\_layer\_output\_14\*-1.10141) + (demapping\_layer\_output\_15\*-0.338896) + (demapping\_layer\_output\_16\*1.3838) + (demapping\_layer\_output\_17\*-0.2039) + (demapping\_layer\_output\_18\*-0.612449) + (demapping\_layer\_output\_19\*-1.63272) + (demapping\_layer\_output\_20\*-0.622707) + (demapping\_layer\_output\_21\*0.495064) + (demapping\_layer\_output\_22\*-1.09223) + (demapping\_layer\_output\_23\*0.335528) + (demapping\_layer\_output\_24\*-0.0640759) );

output\_layer\_output\_5 = logistic( -1.58722 + (demapping\_layer\_output\_0\*0.406462) + (demapping\_layer\_output\_1\*-0.467828) + (demapping\_layer\_output\_2\*1.48161) + (demapping\_layer\_output\_3\*-0.0836221) + (demapping\_layer\_output\_4\*1.08306) + (demapping\_layer\_output\_5\*-0.624561) + (demapping\_layer\_output\_6\*0.937374) + (demapping\_layer\_output\_7\*-0.682835) + (demapping\_layer\_output\_8\*0.828035) + (demapping\_layer\_output\_9\*0.293386) + (demapping\_layer\_output\_10\*-0.453591) + (demapping\_layer\_output\_11\*-0.0871406) + (demapping\_layer\_output\_12\*0.348759) + (demapping\_layer\_output\_13\*-0.823477) + (demapping\_layer\_output\_14\*0.0696929) + (demapping\_layer\_output\_15\*-0.376179) + (demapping\_layer\_output\_16\*-0.13251) + (demapping\_layer\_output\_17\*0.888781) + (demapping\_layer\_output\_18\*-0.844213) + (demapping\_layer\_output\_19\*-1.63503) + (demapping\_layer\_output\_20\*-1.41992) + (demapping\_layer\_output\_21\*-0.630778) + (demapping\_layer\_output\_22\*-0.141991) + (demapping\_layer\_output\_23\*-1.32281) + (demapping\_layer\_output\_24\*-0.601071) );

output\_layer\_output\_6 = logistic( -1.50587 + (demapping\_layer\_output\_0\*-0.0164477) + (demapping\_layer\_output\_1\*-2.07174) + (demapping\_layer\_output\_2\*0.025878) + (demapping\_layer\_output\_3\*-0.629602) + (demapping\_layer\_output\_4\*0.517042) + (demapping\_layer\_output\_5\*-3.48865) + (demapping\_layer\_output\_6\*-1.14196) + (demapping\_layer\_output\_7\*-1.55477) + (demapping\_layer\_output\_8\*-0.0362334) + (demapping\_layer\_output\_9\*0.386231) + (demapping\_layer\_output\_10\*-0.62256) + (demapping\_layer\_output\_11\*-1.15041) + (demapping\_layer\_output\_12\*-0.846436) + (demapping\_layer\_output\_13\*0.338823) + (demapping\_layer\_output\_14\*2.24177) + (demapping\_layer\_output\_15\*0.0908674) + (demapping\_layer\_output\_16\*1.26111) + (demapping\_layer\_output\_17\*-0.555995) + (demapping\_layer\_output\_18\*-0.213893) + (demapping\_layer\_output\_19\*-1.64329) + (demapping\_layer\_output\_20\*-0.364839) + (demapping\_layer\_output\_21\*1.15802) + (demapping\_layer\_output\_22\*-0.0261541) + (demapping\_layer\_output\_23\*0.59984) + (demapping\_layer\_output\_24\*-1.50971) );

output\_layer\_output\_7 = logistic( -1.43793 + (demapping\_layer\_output\_0\*-0.59584) + (demapping\_layer\_output\_1\*2.17518) + (demapping\_layer\_output\_2\*-1.74539) + (demapping\_layer\_output\_3\*3.22196) + (demapping\_layer\_output\_4\*1.55131) + (demapping\_layer\_output\_5\*0.730445) + (demapping\_layer\_output\_6\*-0.473695) + (demapping\_layer\_output\_7\*-1.1092) + (demapping\_layer\_output\_8\*-2.28815) + (demapping\_layer\_output\_9\*-1.43264) + (demapping\_layer\_output\_10\*-0.119719) + (demapping\_layer\_output\_11\*2.4305) + (demapping\_layer\_output\_12\*-0.65408) + (demapping\_layer\_output\_13\*0.269342) + (demapping\_layer\_output\_14\*-0.682721) + (demapping\_layer\_output\_15\*-0.806187) + (demapping\_layer\_output\_16\*0.48556) + (demapping\_layer\_output\_17\*-1.64424) + (demapping\_layer\_output\_18\*0.603291) + (demapping\_layer\_output\_19\*-1.56044) + (demapping\_layer\_output\_20\*1.19768) + (demapping\_layer\_output\_21\*1.20869) + (demapping\_layer\_output\_22\*-1.40009) + (demapping\_layer\_output\_23\*3.79019) + (demapping\_layer\_output\_24\*1.79371) );

output\_layer\_output\_8 = logistic( -0.638724 + (demapping\_layer\_output\_0\*-0.352832) + (demapping\_layer\_output\_1\*-0.791534) + (demapping\_layer\_output\_2\*0.971605) + (demapping\_layer\_output\_3\*-1.05486) + (demapping\_layer\_output\_4\*1.10641) + (demapping\_layer\_output\_5\*0.0821202) + (demapping\_layer\_output\_6\*-0.105789) + (demapping\_layer\_output\_7\*-0.548475) + (demapping\_layer\_output\_8\*0.125339) + (demapping\_layer\_output\_9\*0.486516) + (demapping\_layer\_output\_10\*0.150329) + (demapping\_layer\_output\_11\*-0.275327) + (demapping\_layer\_output\_12\*0.878045) + (demapping\_layer\_output\_13\*0.0153774) + (demapping\_layer\_output\_14\*-0.40455) + (demapping\_layer\_output\_15\*-0.113557) + (demapping\_layer\_output\_16\*0.584919) + (demapping\_layer\_output\_17\*0.410603) + (demapping\_layer\_output\_18\*-0.335518) + (demapping\_layer\_output\_19\*-0.995567) + (demapping\_layer\_output\_20\*0.317909) + (demapping\_layer\_output\_21\*0.084391) + (demapping\_layer\_output\_22\*-1.26723) + (demapping\_layer\_output\_23\*-0.0577618) + (demapping\_layer\_output\_24\*-0.0640881) );

output\_layer\_output\_9 = logistic( -1.68991 + (demapping\_layer\_output\_0\*-0.184933) + (demapping\_layer\_output\_1\*-0.597709) + (demapping\_layer\_output\_2\*0.179696) + (demapping\_layer\_output\_3\*-0.211969) + (demapping\_layer\_output\_4\*0.0850216) + (demapping\_layer\_output\_5\*-0.730043) + (demapping\_layer\_output\_6\*-0.191847) + (demapping\_layer\_output\_7\*0.543641) + (demapping\_layer\_output\_8\*-0.114827) + (demapping\_layer\_output\_9\*-0.0856251) + (demapping\_layer\_output\_10\*-1.51998) + (demapping\_layer\_output\_11\*-0.204092) + (demapping\_layer\_output\_12\*0.0339725) + (demapping\_layer\_output\_13\*0.19007) + (demapping\_layer\_output\_14\*0.925912) + (demapping\_layer\_output\_15\*0.0383854) + (demapping\_layer\_output\_16\*0.359699) + (demapping\_layer\_output\_17\*-0.153479) + (demapping\_layer\_output\_18\*0.150083) + (demapping\_layer\_output\_19\*-1.3741) + (demapping\_layer\_output\_20\*0.101486) + (demapping\_layer\_output\_21\*0.00613774) + (demapping\_layer\_output\_22\*-0.33137) + (demapping\_layer\_output\_23\*-1.2326) + (demapping\_layer\_output\_24\*-0.529321) );

output\_layer\_output\_10 = logistic( -2.9254 + (demapping\_layer\_output\_0\*-2.55718) + (demapping\_layer\_output\_1\*-2.2865) + (demapping\_layer\_output\_2\*-2.92256) + (demapping\_layer\_output\_3\*2.11127) + (demapping\_layer\_output\_4\*-2.34944) + (demapping\_layer\_output\_5\*-2.34774) + (demapping\_layer\_output\_6\*4.25954) + (demapping\_layer\_output\_7\*0.153613) + (demapping\_layer\_output\_8\*-9.23808) + (demapping\_layer\_output\_9\*-0.34643) + (demapping\_layer\_output\_10\*-1.34283) + (demapping\_layer\_output\_11\*-2.20061) + (demapping\_layer\_output\_12\*-4.59593) + (demapping\_layer\_output\_13\*4.61257) + (demapping\_layer\_output\_14\*-2.82915) + (demapping\_layer\_output\_15\*-1.49306) + (demapping\_layer\_output\_16\*2.64751) + (demapping\_layer\_output\_17\*0.657119) + (demapping\_layer\_output\_18\*2.97108) + (demapping\_layer\_output\_19\*-2.76734) + (demapping\_layer\_output\_20\*-0.406061) + (demapping\_layer\_output\_21\*5.70821) + (demapping\_layer\_output\_22\*-1.70851) + (demapping\_layer\_output\_23\*7.40636) + (demapping\_layer\_output\_24\*-1.87143) );

output\_layer\_output\_11 = logistic( -2.26799 + (demapping\_layer\_output\_0\*1.31987) + (demapping\_layer\_output\_1\*5.2494) + (demapping\_layer\_output\_2\*-0.399343) + (demapping\_layer\_output\_3\*-0.928394) + (demapping\_layer\_output\_4\*1.9008) + (demapping\_layer\_output\_5\*0.636892) + (demapping\_layer\_output\_6\*3.06965) + (demapping\_layer\_output\_7\*1.40935) + (demapping\_layer\_output\_8\*-1.96905) + (demapping\_layer\_output\_9\*-0.704354) + (demapping\_layer\_output\_10\*0.723637) + (demapping\_layer\_output\_11\*-1.37433) + (demapping\_layer\_output\_12\*0.897845) + (demapping\_layer\_output\_13\*-3.24967) + (demapping\_layer\_output\_14\*-0.481649) + (demapping\_layer\_output\_15\*-0.117063) + (demapping\_layer\_output\_16\*1.39639) + (demapping\_layer\_output\_17\*-6.15356) + (demapping\_layer\_output\_18\*-0.559323) + (demapping\_layer\_output\_19\*-2.26001) + (demapping\_layer\_output\_20\*1.31609) + (demapping\_layer\_output\_21\*-0.819014) + (demapping\_layer\_output\_22\*-2.52899) + (demapping\_layer\_output\_23\*-3.50505) + (demapping\_layer\_output\_24\*0.933029) );

output\_layer\_output\_12 = logistic( -1.50276 + (demapping\_layer\_output\_0\*-4.37198) + (demapping\_layer\_output\_1\*-0.0182147) + (demapping\_layer\_output\_2\*-0.260676) + (demapping\_layer\_output\_3\*-0.695916) + (demapping\_layer\_output\_4\*-1.86724) + (demapping\_layer\_output\_5\*-0.135398) + (demapping\_layer\_output\_6\*0.768338) + (demapping\_layer\_output\_7\*-1.79153) + (demapping\_layer\_output\_8\*-1.0699) + (demapping\_layer\_output\_9\*-0.156848) + (demapping\_layer\_output\_10\*-1.15684) + (demapping\_layer\_output\_11\*-1.51784) + (demapping\_layer\_output\_12\*-1.20528) + (demapping\_layer\_output\_13\*-1.46468) + (demapping\_layer\_output\_14\*-0.633984) + (demapping\_layer\_output\_15\*-0.0607089) + (demapping\_layer\_output\_16\*1.30876) + (demapping\_layer\_output\_17\*-0.269067) + (demapping\_layer\_output\_18\*0.841065) + (demapping\_layer\_output\_19\*-1.71466) + (demapping\_layer\_output\_20\*-1.3964) + (demapping\_layer\_output\_21\*0.767445) + (demapping\_layer\_output\_22\*-0.000487604) + (demapping\_layer\_output\_23\*0.0161509) + (demapping\_layer\_output\_24\*1.02292) );

output\_layer\_output\_13 = logistic( -0.232829 + (demapping\_layer\_output\_0\*-0.141567) + (demapping\_layer\_output\_1\*0.18292) + (demapping\_layer\_output\_2\*0.743397) + (demapping\_layer\_output\_3\*0.478475) + (demapping\_layer\_output\_4\*0.172917) + (demapping\_layer\_output\_5\*-0.283328) + (demapping\_layer\_output\_6\*-0.265773) + (demapping\_layer\_output\_7\*0.300977) + (demapping\_layer\_output\_8\*-0.300499) + (demapping\_layer\_output\_9\*-0.0372802) + (demapping\_layer\_output\_10\*-1.57277) + (demapping\_layer\_output\_11\*-0.249881) + (demapping\_layer\_output\_12\*0.521422) + (demapping\_layer\_output\_13\*-0.0555746) + (demapping\_layer\_output\_14\*0.658682) + (demapping\_layer\_output\_15\*0.131843) + (demapping\_layer\_output\_16\*0.264759) + (demapping\_layer\_output\_17\*-0.369557) + (demapping\_layer\_output\_18\*0.377557) + (demapping\_layer\_output\_19\*-0.511916) + (demapping\_layer\_output\_20\*0.0707295) + (demapping\_layer\_output\_21\*0.136154) + (demapping\_layer\_output\_22\*-1.29252) + (demapping\_layer\_output\_23\*0.0152712) + (demapping\_layer\_output\_24\*0.208716) );

output\_layer\_output\_14 = logistic( -0.410025 + (demapping\_layer\_output\_0\*0.110303) + (demapping\_layer\_output\_1\*-1.6172) + (demapping\_layer\_output\_2\*1.89448) + (demapping\_layer\_output\_3\*-1.42483) + (demapping\_layer\_output\_4\*0.587678) + (demapping\_layer\_output\_5\*-0.531968) + (demapping\_layer\_output\_6\*0.0718787) + (demapping\_layer\_output\_7\*-0.567709) + (demapping\_layer\_output\_8\*-1.47251) + (demapping\_layer\_output\_9\*0.937494) + (demapping\_layer\_output\_10\*-0.844592) + (demapping\_layer\_output\_11\*-0.338392) + (demapping\_layer\_output\_12\*0.234241) + (demapping\_layer\_output\_13\*0.794894) + (demapping\_layer\_output\_14\*-0.150928) + (demapping\_layer\_output\_15\*-0.482588) + (demapping\_layer\_output\_16\*0.0328785) + (demapping\_layer\_output\_17\*-0.341454) + (demapping\_layer\_output\_18\*0.139834) + (demapping\_layer\_output\_19\*-0.452469) + (demapping\_layer\_output\_20\*-0.282406) + (demapping\_layer\_output\_21\*-0.391197) + (demapping\_layer\_output\_22\*-0.260574) + (demapping\_layer\_output\_23\*-0.950706) + (demapping\_layer\_output\_24\*-0.352794) );

output\_layer\_output\_15 = logistic( -1.06198 + (demapping\_layer\_output\_0\*-0.456409) + (demapping\_layer\_output\_1\*-1.23807) + (demapping\_layer\_output\_2\*-0.113853) + (demapping\_layer\_output\_3\*-1.00218) + (demapping\_layer\_output\_4\*0.23543) + (demapping\_layer\_output\_5\*-1.87704) + (demapping\_layer\_output\_6\*0.413077) + (demapping\_layer\_output\_7\*-1.19486) + (demapping\_layer\_output\_8\*1.11678) + (demapping\_layer\_output\_9\*-0.197155) + (demapping\_layer\_output\_10\*0.249453) + (demapping\_layer\_output\_11\*1.17238) + (demapping\_layer\_output\_12\*0.133409) + (demapping\_layer\_output\_13\*-1.03756) + (demapping\_layer\_output\_14\*0.436163) + (demapping\_layer\_output\_15\*-0.627472) + (demapping\_layer\_output\_16\*-0.611416) + (demapping\_layer\_output\_17\*0.33363) + (demapping\_layer\_output\_18\*-0.221966) + (demapping\_layer\_output\_19\*-0.979335) + (demapping\_layer\_output\_20\*0.64689) + (demapping\_layer\_output\_21\*0.0705398) + (demapping\_layer\_output\_22\*-0.897387) + (demapping\_layer\_output\_23\*0.376306) + (demapping\_layer\_output\_24\*0.0963382) );

output\_layer\_output\_16 = logistic( -1.25318 + (demapping\_layer\_output\_0\*0.479542) + (demapping\_layer\_output\_1\*-1.52132) + (demapping\_layer\_output\_2\*2.52642) + (demapping\_layer\_output\_3\*-0.288588) + (demapping\_layer\_output\_4\*-0.88512) + (demapping\_layer\_output\_5\*-1.77515) + (demapping\_layer\_output\_6\*-0.724338) + (demapping\_layer\_output\_7\*1.20289) + (demapping\_layer\_output\_8\*1.14655) + (demapping\_layer\_output\_9\*-0.986161) + (demapping\_layer\_output\_10\*-1.08386) + (demapping\_layer\_output\_11\*-1.9464) + (demapping\_layer\_output\_12\*-1.6016) + (demapping\_layer\_output\_13\*-0.687135) + (demapping\_layer\_output\_14\*-0.180408) + (demapping\_layer\_output\_15\*2.6043) + (demapping\_layer\_output\_16\*-0.599514) + (demapping\_layer\_output\_17\*0.41162) + (demapping\_layer\_output\_18\*0.858054) + (demapping\_layer\_output\_19\*-1.49483) + (demapping\_layer\_output\_20\*0.24083) + (demapping\_layer\_output\_21\*1.78486) + (demapping\_layer\_output\_22\*-0.918034) + (demapping\_layer\_output\_23\*0.196781) + (demapping\_layer\_output\_24\*-0.497466) );

output\_layer\_output\_17 = logistic( -1.36701 + (demapping\_layer\_output\_0\*0.292278) + (demapping\_layer\_output\_1\*0.150703) + (demapping\_layer\_output\_2\*0.401015) + (demapping\_layer\_output\_3\*0.972057) + (demapping\_layer\_output\_4\*0.556196) + (demapping\_layer\_output\_5\*0.331398) + (demapping\_layer\_output\_6\*-2.24937) + (demapping\_layer\_output\_7\*-1.56944) + (demapping\_layer\_output\_8\*0.928025) + (demapping\_layer\_output\_9\*-0.0743857) + (demapping\_layer\_output\_10\*-0.248411) + (demapping\_layer\_output\_11\*0.0870705) + (demapping\_layer\_output\_12\*0.294432) + (demapping\_layer\_output\_13\*0.263673) + (demapping\_layer\_output\_14\*0.434031) + (demapping\_layer\_output\_15\*0.166341) + (demapping\_layer\_output\_16\*0.730213) + (demapping\_layer\_output\_17\*0.816493) + (demapping\_layer\_output\_18\*-0.220563) + (demapping\_layer\_output\_19\*-1.40697) + (demapping\_layer\_output\_20\*-0.458619) + (demapping\_layer\_output\_21\*1.46057) + (demapping\_layer\_output\_22\*-0.118678) + (demapping\_layer\_output\_23\*1.3439) + (demapping\_layer\_output\_24\*-0.232038) );

output\_layer\_output\_18 = logistic( -0.155205 + (demapping\_layer\_output\_0\*-0.328098) + (demapping\_layer\_output\_1\*0.316504) + (demapping\_layer\_output\_2\*0.25774) + (demapping\_layer\_output\_3\*-0.174936) + (demapping\_layer\_output\_4\*0.220758) + (demapping\_layer\_output\_5\*-0.113796) + (demapping\_layer\_output\_6\*-1.73415) + (demapping\_layer\_output\_7\*-0.215271) + (demapping\_layer\_output\_8\*-0.525428) + (demapping\_layer\_output\_9\*0.158899) + (demapping\_layer\_output\_10\*-0.319068) + (demapping\_layer\_output\_11\*-0.903744) + (demapping\_layer\_output\_12\*-1.64111) + (demapping\_layer\_output\_13\*0.569821) + (demapping\_layer\_output\_14\*-1.23047) + (demapping\_layer\_output\_15\*0.377344) + (demapping\_layer\_output\_16\*-0.031141) + (demapping\_layer\_output\_17\*-0.683913) + (demapping\_layer\_output\_18\*0.742385) + (demapping\_layer\_output\_19\*0.113475) + (demapping\_layer\_output\_20\*0.604265) + (demapping\_layer\_output\_21\*0.719885) + (demapping\_layer\_output\_22\*-0.0407923) + (demapping\_layer\_output\_23\*0.111404) + (demapping\_layer\_output\_24\*-0.138445) );

output\_layer\_output\_19 = logistic( -1.25515 + (demapping\_layer\_output\_0\*4.26565) + (demapping\_layer\_output\_1\*1.35588) + (demapping\_layer\_output\_2\*-2.06103) + (demapping\_layer\_output\_3\*-2.33582) + (demapping\_layer\_output\_4\*-3.70206) + (demapping\_layer\_output\_5\*-1.22877) + (demapping\_layer\_output\_6\*-4.19307) + (demapping\_layer\_output\_7\*-1.03841) + (demapping\_layer\_output\_8\*1.15701) + (demapping\_layer\_output\_9\*1.00208) + (demapping\_layer\_output\_10\*-0.456923) + (demapping\_layer\_output\_11\*-6.41614) + (demapping\_layer\_output\_12\*-0.987343) + (demapping\_layer\_output\_13\*-1.99239) + (demapping\_layer\_output\_14\*-1.18089) + (demapping\_layer\_output\_15\*-3.04798) + (demapping\_layer\_output\_16\*1.28331) + (demapping\_layer\_output\_17\*-2.41436) + (demapping\_layer\_output\_18\*-6.83186) + (demapping\_layer\_output\_19\*-1.4053) + (demapping\_layer\_output\_20\*-2.38119) + (demapping\_layer\_output\_21\*-2.30331) + (demapping\_layer\_output\_22\*-2.63434) + (demapping\_layer\_output\_23\*3.79114) + (demapping\_layer\_output\_24\*1.01543) );

output\_layer\_output\_20 = logistic( 0.00631319 + (demapping\_layer\_output\_0\*-0.0493496) + (demapping\_layer\_output\_1\*0.0951456) + (demapping\_layer\_output\_2\*-1.21921) + (demapping\_layer\_output\_3\*0.943755) + (demapping\_layer\_output\_4\*-0.408169) + (demapping\_layer\_output\_5\*-0.31466) + (demapping\_layer\_output\_6\*1.95469) + (demapping\_layer\_output\_7\*0.935724) + (demapping\_layer\_output\_8\*-0.708087) + (demapping\_layer\_output\_9\*0.0232439) + (demapping\_layer\_output\_10\*-4.07943) + (demapping\_layer\_output\_11\*1.28154) + (demapping\_layer\_output\_12\*-2.5128) + (demapping\_layer\_output\_13\*-1.24037) + (demapping\_layer\_output\_14\*-0.247691) + (demapping\_layer\_output\_15\*-1.17577) + (demapping\_layer\_output\_16\*-0.682661) + (demapping\_layer\_output\_17\*0.191699) + (demapping\_layer\_output\_18\*-0.567174) + (demapping\_layer\_output\_19\*-0.389998) + (demapping\_layer\_output\_20\*-1.89759) + (demapping\_layer\_output\_21\*1.12205) + (demapping\_layer\_output\_22\*-2.27894) + (demapping\_layer\_output\_23\*-2.95452) + (demapping\_layer\_output\_24\*-0.675771) );

output\_layer\_output\_21 = logistic( -1.77533 + (demapping\_layer\_output\_0\*0.311865) + (demapping\_layer\_output\_1\*2.21164) + (demapping\_layer\_output\_2\*1.00227) + (demapping\_layer\_output\_3\*1.42267) + (demapping\_layer\_output\_4\*1.27896) + (demapping\_layer\_output\_5\*0.539882) + (demapping\_layer\_output\_6\*-1.64777) + (demapping\_layer\_output\_7\*-0.554021) + (demapping\_layer\_output\_8\*0.0136653) + (demapping\_layer\_output\_9\*1.85176) + (demapping\_layer\_output\_10\*-0.909989) + (demapping\_layer\_output\_11\*-2.74202) + (demapping\_layer\_output\_12\*-1.51577) + (demapping\_layer\_output\_13\*0.794839) + (demapping\_layer\_output\_14\*-0.206146) + (demapping\_layer\_output\_15\*0.715472) + (demapping\_layer\_output\_16\*0.772707) + (demapping\_layer\_output\_17\*0.470254) + (demapping\_layer\_output\_18\*-0.738403) + (demapping\_layer\_output\_19\*-2.04123) + (demapping\_layer\_output\_20\*-2.21994) + (demapping\_layer\_output\_21\*0.981313) + (demapping\_layer\_output\_22\*-0.742208) + (demapping\_layer\_output\_23\*-1.50588) + (demapping\_layer\_output\_24\*1.05447) );

output\_layer\_output\_22 = logistic( -1.24434 + (demapping\_layer\_output\_0\*-1.2375) + (demapping\_layer\_output\_1\*1.55218) + (demapping\_layer\_output\_2\*0.816513) + (demapping\_layer\_output\_3\*-0.13328) + (demapping\_layer\_output\_4\*0.261683) + (demapping\_layer\_output\_5\*-2.26506) + (demapping\_layer\_output\_6\*-0.56938) + (demapping\_layer\_output\_7\*-1.2517) + (demapping\_layer\_output\_8\*-1.81481) + (demapping\_layer\_output\_9\*0.799502) + (demapping\_layer\_output\_10\*-0.437286) + (demapping\_layer\_output\_11\*-0.520764) + (demapping\_layer\_output\_12\*0.826913) + (demapping\_layer\_output\_13\*2.37353) + (demapping\_layer\_output\_14\*0.00723981) + (demapping\_layer\_output\_15\*0.0854084) + (demapping\_layer\_output\_16\*-0.363122) + (demapping\_layer\_output\_17\*-0.458159) + (demapping\_layer\_output\_18\*-0.496281) + (demapping\_layer\_output\_19\*-1.73313) + (demapping\_layer\_output\_20\*-0.74034) + (demapping\_layer\_output\_21\*1.1613) + (demapping\_layer\_output\_22\*-0.895589) + (demapping\_layer\_output\_23\*0.632691) + (demapping\_layer\_output\_24\*2.34781) );

output\_layer\_output\_23 = logistic( -1.1428 + (demapping\_layer\_output\_0\*-0.168193) + (demapping\_layer\_output\_1\*0.406445) + (demapping\_layer\_output\_2\*-0.0197724) + (demapping\_layer\_output\_3\*-0.416683) + (demapping\_layer\_output\_4\*1.28711) + (demapping\_layer\_output\_5\*-2.45233) + (demapping\_layer\_output\_6\*-0.217845) + (demapping\_layer\_output\_7\*-0.305517) + (demapping\_layer\_output\_8\*0.963425) + (demapping\_layer\_output\_9\*-0.22451) + (demapping\_layer\_output\_10\*0.380755) + (demapping\_layer\_output\_11\*-0.694839) + (demapping\_layer\_output\_12\*-0.60957) + (demapping\_layer\_output\_13\*-0.0195971) + (demapping\_layer\_output\_14\*2.78132) + (demapping\_layer\_output\_15\*0.331697) + (demapping\_layer\_output\_16\*0.245938) + (demapping\_layer\_output\_17\*-0.294766) + (demapping\_layer\_output\_18\*0.243615) + (demapping\_layer\_output\_19\*-1.15986) + (demapping\_layer\_output\_20\*-1.06396) + (demapping\_layer\_output\_21\*0.338502) + (demapping\_layer\_output\_22\*-1.39998) + (demapping\_layer\_output\_23\*1.277) + (demapping\_layer\_output\_24\*1.41225) );

output\_layer\_output\_24 = logistic( -1.44827 + (demapping\_layer\_output\_0\*1.42142) + (demapping\_layer\_output\_1\*-0.87191) + (demapping\_layer\_output\_2\*1.61679) + (demapping\_layer\_output\_3\*-0.357776) + (demapping\_layer\_output\_4\*-0.173224) + (demapping\_layer\_output\_5\*-0.729419) + (demapping\_layer\_output\_6\*-0.266858) + (demapping\_layer\_output\_7\*0.959779) + (demapping\_layer\_output\_8\*-1.15673) + (demapping\_layer\_output\_9\*-1.47791) + (demapping\_layer\_output\_10\*-0.712873) + (demapping\_layer\_output\_11\*0.460801) + (demapping\_layer\_output\_12\*-2.00111) + (demapping\_layer\_output\_13\*1.45387) + (demapping\_layer\_output\_14\*-0.88783) + (demapping\_layer\_output\_15\*1.22233) + (demapping\_layer\_output\_16\*-0.62931) + (demapping\_layer\_output\_17\*0.00301505) + (demapping\_layer\_output\_18\*-0.89663) + (demapping\_layer\_output\_19\*-1.67267) + (demapping\_layer\_output\_20\*-0.934132) + (demapping\_layer\_output\_21\*0.848738) + (demapping\_layer\_output\_22\*-0.960134) + (demapping\_layer\_output\_23\*0.77002) + (demapping\_layer\_output\_24\*-0.227023) );

output\_layer\_output\_25 = logistic( -1.59509 + (demapping\_layer\_output\_0\*-0.25042) + (demapping\_layer\_output\_1\*0.0784105) + (demapping\_layer\_output\_2\*1.15448) + (demapping\_layer\_output\_3\*0.639215) + (demapping\_layer\_output\_4\*0.414386) + (demapping\_layer\_output\_5\*-0.797845) + (demapping\_layer\_output\_6\*-0.822579) + (demapping\_layer\_output\_7\*0.37804) + (demapping\_layer\_output\_8\*-0.477898) + (demapping\_layer\_output\_9\*0.566612) + (demapping\_layer\_output\_10\*-1.40105) + (demapping\_layer\_output\_11\*-1.05592) + (demapping\_layer\_output\_12\*0.699663) + (demapping\_layer\_output\_13\*-0.153933) + (demapping\_layer\_output\_14\*0.259235) + (demapping\_layer\_output\_15\*-0.173462) + (demapping\_layer\_output\_16\*0.495003) + (demapping\_layer\_output\_17\*-1.12071) + (demapping\_layer\_output\_18\*-0.0393337) + (demapping\_layer\_output\_19\*-1.33012) + (demapping\_layer\_output\_20\*-0.149589) + (demapping\_layer\_output\_21\*-0.219051) + (demapping\_layer\_output\_22\*0.754742) + (demapping\_layer\_output\_23\*0.0227299) + (demapping\_layer\_output\_24\*-0.105932) );

output\_layer\_output\_26 = logistic( -0.14564 + (demapping\_layer\_output\_0\*-0.342951) + (demapping\_layer\_output\_1\*0.26132) + (demapping\_layer\_output\_2\*0.6404) + (demapping\_layer\_output\_3\*-0.115766) + (demapping\_layer\_output\_4\*0.937796) + (demapping\_layer\_output\_5\*-0.0295242) + (demapping\_layer\_output\_6\*-1.48517) + (demapping\_layer\_output\_7\*-0.499357) + (demapping\_layer\_output\_8\*-0.98825) + (demapping\_layer\_output\_9\*0.166199) + (demapping\_layer\_output\_10\*-0.399231) + (demapping\_layer\_output\_11\*-1.18585) + (demapping\_layer\_output\_12\*-0.684064) + (demapping\_layer\_output\_13\*0.309874) + (demapping\_layer\_output\_14\*0.295356) + (demapping\_layer\_output\_15\*0.275515) + (demapping\_layer\_output\_16\*1.43229) + (demapping\_layer\_output\_17\*-0.604456) + (demapping\_layer\_output\_18\*0.198551) + (demapping\_layer\_output\_19\*-0.394005) + (demapping\_layer\_output\_20\*0.436244) + (demapping\_layer\_output\_21\*0.624568) + (demapping\_layer\_output\_22\*0.606033) + (demapping\_layer\_output\_23\*0.310104) + (demapping\_layer\_output\_24\*-0.0374533) );

output\_layer\_output\_27 = logistic( 1.41964 + (demapping\_layer\_output\_0\*-2.29177) + (demapping\_layer\_output\_1\*-2.25839) + (demapping\_layer\_output\_2\*2.75691) + (demapping\_layer\_output\_3\*-2.05771) + (demapping\_layer\_output\_4\*-3.46832) + (demapping\_layer\_output\_5\*-3.08336) + (demapping\_layer\_output\_6\*-1.03885) + (demapping\_layer\_output\_7\*0.286198) + (demapping\_layer\_output\_8\*-0.106036) + (demapping\_layer\_output\_9\*0.524593) + (demapping\_layer\_output\_10\*-0.254128) + (demapping\_layer\_output\_11\*-0.629298) + (demapping\_layer\_output\_12\*-1.4198) + (demapping\_layer\_output\_13\*-0.240582) + (demapping\_layer\_output\_14\*-2.85329) + (demapping\_layer\_output\_15\*0.878141) + (demapping\_layer\_output\_16\*0.0494544) + (demapping\_layer\_output\_17\*-2.23114) + (demapping\_layer\_output\_18\*2.31899) + (demapping\_layer\_output\_19\*0.971717) + (demapping\_layer\_output\_20\*-0.972512) + (demapping\_layer\_output\_21\*-0.263476) + (demapping\_layer\_output\_22\*1.10595) + (demapping\_layer\_output\_23\*1.63394) + (demapping\_layer\_output\_24\*1.53684) );

output\_layer\_output\_28 = logistic( -1.26235 + (demapping\_layer\_output\_0\*-1.92633) + (demapping\_layer\_output\_1\*1.36083) + (demapping\_layer\_output\_2\*0.765992) + (demapping\_layer\_output\_3\*-0.421314) + (demapping\_layer\_output\_4\*-0.211179) + (demapping\_layer\_output\_5\*-0.72842) + (demapping\_layer\_output\_6\*-0.945061) + (demapping\_layer\_output\_7\*-1.59091) + (demapping\_layer\_output\_8\*0.234718) + (demapping\_layer\_output\_9\*-2.34969) + (demapping\_layer\_output\_10\*-0.866206) + (demapping\_layer\_output\_11\*1.06347) + (demapping\_layer\_output\_12\*-4.32299) + (demapping\_layer\_output\_13\*-0.376769) + (demapping\_layer\_output\_14\*-1.24762) + (demapping\_layer\_output\_15\*0.238162) + (demapping\_layer\_output\_16\*2.40602) + (demapping\_layer\_output\_17\*-3.36029) + (demapping\_layer\_output\_18\*1.68062) + (demapping\_layer\_output\_19\*-1.51431) + (demapping\_layer\_output\_20\*-1.27806) + (demapping\_layer\_output\_21\*1.2429) + (demapping\_layer\_output\_22\*-1.22783) + (demapping\_layer\_output\_23\*1.02325) + (demapping\_layer\_output\_24\*0.435738) );

output\_layer\_output\_29 = logistic( -1.08594 + (demapping\_layer\_output\_0\*1.0011) + (demapping\_layer\_output\_1\*3.23058) + (demapping\_layer\_output\_2\*0.719954) + (demapping\_layer\_output\_3\*-6.21326) + (demapping\_layer\_output\_4\*4.22016) + (demapping\_layer\_output\_5\*-1.11905) + (demapping\_layer\_output\_6\*-2.20313) + (demapping\_layer\_output\_7\*-4.21824) + (demapping\_layer\_output\_8\*1.61312) + (demapping\_layer\_output\_9\*2.99366) + (demapping\_layer\_output\_10\*1.24791) + (demapping\_layer\_output\_11\*-0.142434) + (demapping\_layer\_output\_12\*2.67708) + (demapping\_layer\_output\_13\*1.44958) + (demapping\_layer\_output\_14\*0.49428) + (demapping\_layer\_output\_15\*1.50565) + (demapping\_layer\_output\_16\*2.20746) + (demapping\_layer\_output\_17\*4.6571) + (demapping\_layer\_output\_18\*-2.038) + (demapping\_layer\_output\_19\*-1.44043) + (demapping\_layer\_output\_20\*0.728921) + (demapping\_layer\_output\_21\*0.690482) + (demapping\_layer\_output\_22\*-1.88581) + (demapping\_layer\_output\_23\*-1.47696) + (demapping\_layer\_output\_24\*8.38016) );

output\_layer\_output\_30 = logistic( -1.04587 + (demapping\_layer\_output\_0\*-0.329014) + (demapping\_layer\_output\_1\*-1.43994) + (demapping\_layer\_output\_2\*1.42351) + (demapping\_layer\_output\_3\*-0.211157) + (demapping\_layer\_output\_4\*0.866252) + (demapping\_layer\_output\_5\*-0.34143) + (demapping\_layer\_output\_6\*0.284423) + (demapping\_layer\_output\_7\*-0.348432) + (demapping\_layer\_output\_8\*-0.210382) + (demapping\_layer\_output\_9\*1.82835) + (demapping\_layer\_output\_10\*-0.654872) + (demapping\_layer\_output\_11\*-1.3465) + (demapping\_layer\_output\_12\*-0.220284) + (demapping\_layer\_output\_13\*-1.42308) + (demapping\_layer\_output\_14\*-0.70335) + (demapping\_layer\_output\_15\*-0.43656) + (demapping\_layer\_output\_16\*2.74) + (demapping\_layer\_output\_17\*0.280338) + (demapping\_layer\_output\_18\*-0.162749) + (demapping\_layer\_output\_19\*-1.29286) + (demapping\_layer\_output\_20\*-0.0181195) + (demapping\_layer\_output\_21\*1.289) + (demapping\_layer\_output\_22\*-1.02389) + (demapping\_layer\_output\_23\*0.0416784) + (demapping\_layer\_output\_24\*0.627843) );

output\_layer\_output\_31 = logistic( -1.19326 + (demapping\_layer\_output\_0\*0.133095) + (demapping\_layer\_output\_1\*0.483124) + (demapping\_layer\_output\_2\*0.210286) + (demapping\_layer\_output\_3\*1.76468) + (demapping\_layer\_output\_4\*0.130914) + (demapping\_layer\_output\_5\*0.690277) + (demapping\_layer\_output\_6\*-1.95773) + (demapping\_layer\_output\_7\*-0.865824) + (demapping\_layer\_output\_8\*1.32943) + (demapping\_layer\_output\_9\*-1.31647) + (demapping\_layer\_output\_10\*-0.791515) + (demapping\_layer\_output\_11\*0.0371379) + (demapping\_layer\_output\_12\*-0.259239) + (demapping\_layer\_output\_13\*1.09545) + (demapping\_layer\_output\_14\*-0.582614) + (demapping\_layer\_output\_15\*1.53946) + (demapping\_layer\_output\_16\*0.283398) + (demapping\_layer\_output\_17\*1.77004) + (demapping\_layer\_output\_18\*-0.96837) + (demapping\_layer\_output\_19\*-1.0353) + (demapping\_layer\_output\_20\*-1.40543) + (demapping\_layer\_output\_21\*0.496523) + (demapping\_layer\_output\_22\*-0.36843) + (demapping\_layer\_output\_23\*1.50577) + (demapping\_layer\_output\_24\*0.634321) );

output\_layer\_output\_32 = logistic( -1.02367 + (demapping\_layer\_output\_0\*-5.23244) + (demapping\_layer\_output\_1\*-5.3524) + (demapping\_layer\_output\_2\*0.207332) + (demapping\_layer\_output\_3\*0.666211) + (demapping\_layer\_output\_4\*-0.309111) + (demapping\_layer\_output\_5\*-1.90686) + (demapping\_layer\_output\_6\*-1.77676) + (demapping\_layer\_output\_7\*-1.5042) + (demapping\_layer\_output\_8\*-0.364767) + (demapping\_layer\_output\_9\*-0.557421) + (demapping\_layer\_output\_10\*0.315205) + (demapping\_layer\_output\_11\*-0.915335) + (demapping\_layer\_output\_12\*-0.218111) + (demapping\_layer\_output\_13\*-0.846471) + (demapping\_layer\_output\_14\*-3.67274) + (demapping\_layer\_output\_15\*-0.403858) + (demapping\_layer\_output\_16\*1.17756) + (demapping\_layer\_output\_17\*-0.47429) + (demapping\_layer\_output\_18\*-0.408772) + (demapping\_layer\_output\_19\*-1.48046) + (demapping\_layer\_output\_20\*-3.69386) + (demapping\_layer\_output\_21\*0.689372) + (demapping\_layer\_output\_22\*-2.10508) + (demapping\_layer\_output\_23\*0.444125) + (demapping\_layer\_output\_24\*-0.647473) );

output\_layer\_output\_33 = logistic( -0.225511 + (demapping\_layer\_output\_0\*0.281824) + (demapping\_layer\_output\_1\*5.38937) + (demapping\_layer\_output\_2\*0.676378) + (demapping\_layer\_output\_3\*2.20935) + (demapping\_layer\_output\_4\*0.302058) + (demapping\_layer\_output\_5\*-0.733747) + (demapping\_layer\_output\_6\*-2.21673) + (demapping\_layer\_output\_7\*-1.84277) + (demapping\_layer\_output\_8\*3.77803) + (demapping\_layer\_output\_9\*-2.76064) + (demapping\_layer\_output\_10\*1.1683) + (demapping\_layer\_output\_11\*-1.56762) + (demapping\_layer\_output\_12\*-1.98845) + (demapping\_layer\_output\_13\*-0.82225) + (demapping\_layer\_output\_14\*-3.16486) + (demapping\_layer\_output\_15\*4.48047) + (demapping\_layer\_output\_16\*-0.76568) + (demapping\_layer\_output\_17\*6.48227) + (demapping\_layer\_output\_18\*-0.337004) + (demapping\_layer\_output\_19\*-0.208312) + (demapping\_layer\_output\_20\*0.0484184) + (demapping\_layer\_output\_21\*4.79472) + (demapping\_layer\_output\_22\*-1.87334) + (demapping\_layer\_output\_23\*4.55928) + (demapping\_layer\_output\_24\*1.73625) );

output\_layer\_output\_34 = logistic( -1.66545 + (demapping\_layer\_output\_0\*-0.0444076) + (demapping\_layer\_output\_1\*-2.12791) + (demapping\_layer\_output\_2\*-2.91023) + (demapping\_layer\_output\_3\*0.333855) + (demapping\_layer\_output\_4\*-0.646379) + (demapping\_layer\_output\_5\*-1.44689) + (demapping\_layer\_output\_6\*0.389415) + (demapping\_layer\_output\_7\*-1.82025) + (demapping\_layer\_output\_8\*-0.865832) + (demapping\_layer\_output\_9\*-2.19715) + (demapping\_layer\_output\_10\*-1.27064) + (demapping\_layer\_output\_11\*0.472435) + (demapping\_layer\_output\_12\*-0.544183) + (demapping\_layer\_output\_13\*1.86654) + (demapping\_layer\_output\_14\*1.36571) + (demapping\_layer\_output\_15\*1.7452) + (demapping\_layer\_output\_16\*1.10519) + (demapping\_layer\_output\_17\*0.45003) + (demapping\_layer\_output\_18\*-2.3576) + (demapping\_layer\_output\_19\*-1.13415) + (demapping\_layer\_output\_20\*-1.2009) + (demapping\_layer\_output\_21\*-1.22364) + (demapping\_layer\_output\_22\*-2.09948) + (demapping\_layer\_output\_23\*-1.64035) + (demapping\_layer\_output\_24\*-0.678581) );

output\_layer\_output\_35 = logistic( -1.32591 + (demapping\_layer\_output\_0\*-2.81538) + (demapping\_layer\_output\_1\*-1.0358) + (demapping\_layer\_output\_2\*2.26885) + (demapping\_layer\_output\_3\*-1.53511) + (demapping\_layer\_output\_4\*-0.31811) + (demapping\_layer\_output\_5\*0.517412) + (demapping\_layer\_output\_6\*-1.24394) + (demapping\_layer\_output\_7\*-1.35894) + (demapping\_layer\_output\_8\*1.56046) + (demapping\_layer\_output\_9\*1.27445) + (demapping\_layer\_output\_10\*-0.800036) + (demapping\_layer\_output\_11\*-0.436111) + (demapping\_layer\_output\_12\*-4.82882) + (demapping\_layer\_output\_13\*-1.61893) + (demapping\_layer\_output\_14\*-3.51263) + (demapping\_layer\_output\_15\*1.00966) + (demapping\_layer\_output\_16\*1.03879) + (demapping\_layer\_output\_17\*3.05721) + (demapping\_layer\_output\_18\*0.59492) + (demapping\_layer\_output\_19\*-1.74947) + (demapping\_layer\_output\_20\*0.478118) + (demapping\_layer\_output\_21\*-1.65891) + (demapping\_layer\_output\_22\*-0.964289) + (demapping\_layer\_output\_23\*-0.530087) + (demapping\_layer\_output\_24\*-0.370156) );

output\_layer\_output\_36 = logistic( -1.26059 + (demapping\_layer\_output\_0\*-1.85612) + (demapping\_layer\_output\_1\*-1.37853) + (demapping\_layer\_output\_2\*-0.154158) + (demapping\_layer\_output\_3\*0.00895875) + (demapping\_layer\_output\_4\*-0.164915) + (demapping\_layer\_output\_5\*0.39225) + (demapping\_layer\_output\_6\*-0.635057) + (demapping\_layer\_output\_7\*-2.50532) + (demapping\_layer\_output\_8\*2.25062) + (demapping\_layer\_output\_9\*-1.74414) + (demapping\_layer\_output\_10\*-0.470493) + (demapping\_layer\_output\_11\*-0.0203919) + (demapping\_layer\_output\_12\*-3.72981) + (demapping\_layer\_output\_13\*1.1516) + (demapping\_layer\_output\_14\*-0.607215) + (demapping\_layer\_output\_15\*-0.337247) + (demapping\_layer\_output\_16\*1.39993) + (demapping\_layer\_output\_17\*0.507178) + (demapping\_layer\_output\_18\*1.23379) + (demapping\_layer\_output\_19\*-1.86755) + (demapping\_layer\_output\_20\*-0.71986) + (demapping\_layer\_output\_21\*-3.05201) + (demapping\_layer\_output\_22\*-0.753587) + (demapping\_layer\_output\_23\*1.13079) + (demapping\_layer\_output\_24\*-0.795289) );

output\_layer\_output\_37 = logistic( -1.3923 + (demapping\_layer\_output\_0\*2.49152) + (demapping\_layer\_output\_1\*3.3405) + (demapping\_layer\_output\_2\*0.980979) + (demapping\_layer\_output\_3\*-0.541214) + (demapping\_layer\_output\_4\*0.152774) + (demapping\_layer\_output\_5\*-3.8345) + (demapping\_layer\_output\_6\*-2.12194) + (demapping\_layer\_output\_7\*-1.74251) + (demapping\_layer\_output\_8\*0.223689) + (demapping\_layer\_output\_9\*-0.224284) + (demapping\_layer\_output\_10\*0.460519) + (demapping\_layer\_output\_11\*2.6454) + (demapping\_layer\_output\_12\*-1.77757) + (demapping\_layer\_output\_13\*-0.881388) + (demapping\_layer\_output\_14\*-1.9278) + (demapping\_layer\_output\_15\*-0.954032) + (demapping\_layer\_output\_16\*1.68877) + (demapping\_layer\_output\_17\*-0.695891) + (demapping\_layer\_output\_18\*-0.817429) + (demapping\_layer\_output\_19\*-1.66915) + (demapping\_layer\_output\_20\*-0.111233) + (demapping\_layer\_output\_21\*1.20711) + (demapping\_layer\_output\_22\*-2.81853) + (demapping\_layer\_output\_23\*3.01423) + (demapping\_layer\_output\_24\*-0.473815) );

output\_layer\_output\_38 = logistic( 0.0825907 + (demapping\_layer\_output\_0\*0.452958) + (demapping\_layer\_output\_1\*-0.0763526) + (demapping\_layer\_output\_2\*0.697481) + (demapping\_layer\_output\_3\*0.351176) + (demapping\_layer\_output\_4\*-0.0131045) + (demapping\_layer\_output\_5\*-0.496177) + (demapping\_layer\_output\_6\*0.225931) + (demapping\_layer\_output\_7\*-0.387502) + (demapping\_layer\_output\_8\*-0.355983) + (demapping\_layer\_output\_9\*0.391895) + (demapping\_layer\_output\_10\*-1.45868) + (demapping\_layer\_output\_11\*0.59354) + (demapping\_layer\_output\_12\*-0.185713) + (demapping\_layer\_output\_13\*0.182013) + (demapping\_layer\_output\_14\*-2.45139) + (demapping\_layer\_output\_15\*-0.0626608) + (demapping\_layer\_output\_16\*-0.988242) + (demapping\_layer\_output\_17\*0.200272) + (demapping\_layer\_output\_18\*-0.0708713) + (demapping\_layer\_output\_19\*-0.207134) + (demapping\_layer\_output\_20\*0.586008) + (demapping\_layer\_output\_21\*0.0211724) + (demapping\_layer\_output\_22\*-0.382403) + (demapping\_layer\_output\_23\*-0.474646) + (demapping\_layer\_output\_24\*0.0450406) );

output\_layer\_output\_39 = logistic( -0.697666 + (demapping\_layer\_output\_0\*-0.582972) + (demapping\_layer\_output\_1\*-0.79762) + (demapping\_layer\_output\_2\*0.977625) + (demapping\_layer\_output\_3\*-0.104212) + (demapping\_layer\_output\_4\*-0.16204) + (demapping\_layer\_output\_5\*-0.385583) + (demapping\_layer\_output\_6\*-0.481098) + (demapping\_layer\_output\_7\*-0.299271) + (demapping\_layer\_output\_8\*0.0459672) + (demapping\_layer\_output\_9\*-0.0168554) + (demapping\_layer\_output\_10\*-0.38257) + (demapping\_layer\_output\_11\*0.365772) + (demapping\_layer\_output\_12\*0.318432) + (demapping\_layer\_output\_13\*0.154665) + (demapping\_layer\_output\_14\*-0.150743) + (demapping\_layer\_output\_15\*-0.392948) + (demapping\_layer\_output\_16\*0.637852) + (demapping\_layer\_output\_17\*0.562907) + (demapping\_layer\_output\_18\*0.405291) + (demapping\_layer\_output\_19\*-0.326523) + (demapping\_layer\_output\_20\*-0.0139955) + (demapping\_layer\_output\_21\*-0.0320392) + (demapping\_layer\_output\_22\*-0.337271) + (demapping\_layer\_output\_23\*-0.26425) + (demapping\_layer\_output\_24\*-0.117871) );

output\_layer\_output\_40 = logistic( -0.980314 + (demapping\_layer\_output\_0\*2.49534) + (demapping\_layer\_output\_1\*0.437126) + (demapping\_layer\_output\_2\*0.0282311) + (demapping\_layer\_output\_3\*-0.569804) + (demapping\_layer\_output\_4\*0.376499) + (demapping\_layer\_output\_5\*-0.673246) + (demapping\_layer\_output\_6\*0.414172) + (demapping\_layer\_output\_7\*-3.31852) + (demapping\_layer\_output\_8\*1.22725) + (demapping\_layer\_output\_9\*-0.0527211) + (demapping\_layer\_output\_10\*-0.964933) + (demapping\_layer\_output\_11\*0.432519) + (demapping\_layer\_output\_12\*-2.165) + (demapping\_layer\_output\_13\*0.0232426) + (demapping\_layer\_output\_14\*-0.861175) + (demapping\_layer\_output\_15\*-0.696318) + (demapping\_layer\_output\_16\*1.02142) + (demapping\_layer\_output\_17\*-0.279548) + (demapping\_layer\_output\_18\*1.77728) + (demapping\_layer\_output\_19\*-0.995287) + (demapping\_layer\_output\_20\*-0.38145) + (demapping\_layer\_output\_21\*-1.00255) + (demapping\_layer\_output\_22\*-0.887569) + (demapping\_layer\_output\_23\*0.798015) + (demapping\_layer\_output\_24\*-0.39493) );

output\_layer\_output\_41 = logistic( -1.22524 + (demapping\_layer\_output\_0\*0.345113) + (demapping\_layer\_output\_1\*-0.999821) + (demapping\_layer\_output\_2\*0.993031) + (demapping\_layer\_output\_3\*-0.153079) + (demapping\_layer\_output\_4\*1.19808) + (demapping\_layer\_output\_5\*-2.76217) + (demapping\_layer\_output\_6\*-0.794754) + (demapping\_layer\_output\_7\*0.370988) + (demapping\_layer\_output\_8\*0.100934) + (demapping\_layer\_output\_9\*-0.21103) + (demapping\_layer\_output\_10\*-1.16142) + (demapping\_layer\_output\_11\*-2.15372) + (demapping\_layer\_output\_12\*-0.657783) + (demapping\_layer\_output\_13\*-0.0575786) + (demapping\_layer\_output\_14\*1.3549) + (demapping\_layer\_output\_15\*-0.359809) + (demapping\_layer\_output\_16\*1.34643) + (demapping\_layer\_output\_17\*-0.991903) + (demapping\_layer\_output\_18\*-0.289996) + (demapping\_layer\_output\_19\*-1.56764) + (demapping\_layer\_output\_20\*-0.972195) + (demapping\_layer\_output\_21\*0.265689) + (demapping\_layer\_output\_22\*-0.0615703) + (demapping\_layer\_output\_23\*0.56966) + (demapping\_layer\_output\_24\*-0.420688) );

output\_layer\_output\_42 = logistic( -0.915373 + (demapping\_layer\_output\_0\*-0.364874) + (demapping\_layer\_output\_1\*2.98153) + (demapping\_layer\_output\_2\*0.524091) + (demapping\_layer\_output\_3\*2.19117) + (demapping\_layer\_output\_4\*0.0562555) + (demapping\_layer\_output\_5\*-5.01068) + (demapping\_layer\_output\_6\*-1.38993) + (demapping\_layer\_output\_7\*-0.999943) + (demapping\_layer\_output\_8\*1.30149) + (demapping\_layer\_output\_9\*-0.360542) + (demapping\_layer\_output\_10\*0.44241) + (demapping\_layer\_output\_11\*0.153945) + (demapping\_layer\_output\_12\*-1.32841) + (demapping\_layer\_output\_13\*0.596343) + (demapping\_layer\_output\_14\*1.39033) + (demapping\_layer\_output\_15\*-0.570881) + (demapping\_layer\_output\_16\*1.63076) + (demapping\_layer\_output\_17\*-1.50391) + (demapping\_layer\_output\_18\*-0.326657) + (demapping\_layer\_output\_19\*-1.04517) + (demapping\_layer\_output\_20\*-1.01752) + (demapping\_layer\_output\_21\*0.630569) + (demapping\_layer\_output\_22\*-0.819171) + (demapping\_layer\_output\_23\*2.24421) + (demapping\_layer\_output\_24\*-0.801462) );

output\_layer\_output\_43 = logistic( -0.197514 + (demapping\_layer\_output\_0\*0.134337) + (demapping\_layer\_output\_1\*-1.2266) + (demapping\_layer\_output\_2\*-0.540102) + (demapping\_layer\_output\_3\*-0.370394) + (demapping\_layer\_output\_4\*0.349139) + (demapping\_layer\_output\_5\*-1.91731) + (demapping\_layer\_output\_6\*0.429146) + (demapping\_layer\_output\_7\*-0.399604) + (demapping\_layer\_output\_8\*-0.288854) + (demapping\_layer\_output\_9\*-0.29683) + (demapping\_layer\_output\_10\*-2.1408) + (demapping\_layer\_output\_11\*0.640373) + (demapping\_layer\_output\_12\*-0.654557) + (demapping\_layer\_output\_13\*0.148372) + (demapping\_layer\_output\_14\*1.10252) + (demapping\_layer\_output\_15\*-0.236344) + (demapping\_layer\_output\_16\*0.406672) + (demapping\_layer\_output\_17\*-0.271709) + (demapping\_layer\_output\_18\*-0.269499) + (demapping\_layer\_output\_19\*-0.400615) + (demapping\_layer\_output\_20\*-0.311825) + (demapping\_layer\_output\_21\*-0.161129) + (demapping\_layer\_output\_22\*0.760781) + (demapping\_layer\_output\_23\*0.008966) + (demapping\_layer\_output\_24\*0.0246797) );

output\_layer\_output\_44 = logistic( -0.327783 + (demapping\_layer\_output\_0\*-1.51003) + (demapping\_layer\_output\_1\*-0.273723) + (demapping\_layer\_output\_2\*0.549507) + (demapping\_layer\_output\_3\*0.136618) + (demapping\_layer\_output\_4\*0.408525) + (demapping\_layer\_output\_5\*0.11796) + (demapping\_layer\_output\_6\*-1.83622) + (demapping\_layer\_output\_7\*-0.733788) + (demapping\_layer\_output\_8\*-0.22732) + (demapping\_layer\_output\_9\*-0.701898) + (demapping\_layer\_output\_10\*-1.00455) + (demapping\_layer\_output\_11\*-1.52914) + (demapping\_layer\_output\_12\*-0.551727) + (demapping\_layer\_output\_13\*0.481945) + (demapping\_layer\_output\_14\*0.956299) + (demapping\_layer\_output\_15\*1.02461) + (demapping\_layer\_output\_16\*1.16716) + (demapping\_layer\_output\_17\*0.524266) + (demapping\_layer\_output\_18\*0.453221) + (demapping\_layer\_output\_19\*-0.407702) + (demapping\_layer\_output\_20\*-0.407622) + (demapping\_layer\_output\_21\*0.881766) + (demapping\_layer\_output\_22\*-0.873254) + (demapping\_layer\_output\_23\*0.470605) + (demapping\_layer\_output\_24\*0.560031) );

output\_layer\_output\_45 = logistic( -0.876984 + (demapping\_layer\_output\_0\*-0.381869) + (demapping\_layer\_output\_1\*-1.09486) + (demapping\_layer\_output\_2\*0.146355) + (demapping\_layer\_output\_3\*-0.194433) + (demapping\_layer\_output\_4\*0.436398) + (demapping\_layer\_output\_5\*-1.25442) + (demapping\_layer\_output\_6\*-0.633253) + (demapping\_layer\_output\_7\*-0.170162) + (demapping\_layer\_output\_8\*-0.550595) + (demapping\_layer\_output\_9\*0.407554) + (demapping\_layer\_output\_10\*1.05508) + (demapping\_layer\_output\_11\*-0.0666369) + (demapping\_layer\_output\_12\*0.566638) + (demapping\_layer\_output\_13\*0.274954) + (demapping\_layer\_output\_14\*-1.62616) + (demapping\_layer\_output\_15\*-0.175391) + (demapping\_layer\_output\_16\*0.727747) + (demapping\_layer\_output\_17\*-0.117716) + (demapping\_layer\_output\_18\*-0.0172656) + (demapping\_layer\_output\_19\*-0.828719) + (demapping\_layer\_output\_20\*1.03875) + (demapping\_layer\_output\_21\*0.461437) + (demapping\_layer\_output\_22\*-2.10667) + (demapping\_layer\_output\_23\*-0.129036) + (demapping\_layer\_output\_24\*-0.334695) );

output\_layer\_output\_46 = logistic( -1.41118 + (demapping\_layer\_output\_0\*-0.683368) + (demapping\_layer\_output\_1\*-1.93741) + (demapping\_layer\_output\_2\*0.622967) + (demapping\_layer\_output\_3\*0.178399) + (demapping\_layer\_output\_4\*1.4602) + (demapping\_layer\_output\_5\*-0.342218) + (demapping\_layer\_output\_6\*-2.26932) + (demapping\_layer\_output\_7\*-0.304023) + (demapping\_layer\_output\_8\*-0.438429) + (demapping\_layer\_output\_9\*-0.111677) + (demapping\_layer\_output\_10\*-0.521926) + (demapping\_layer\_output\_11\*-0.924435) + (demapping\_layer\_output\_12\*0.0746327) + (demapping\_layer\_output\_13\*2.14732) + (demapping\_layer\_output\_14\*0.634226) + (demapping\_layer\_output\_15\*0.128872) + (demapping\_layer\_output\_16\*1.17196) + (demapping\_layer\_output\_17\*-0.429904) + (demapping\_layer\_output\_18\*0.480568) + (demapping\_layer\_output\_19\*-1.59779) + (demapping\_layer\_output\_20\*-1.39796) + (demapping\_layer\_output\_21\*-0.397515) + (demapping\_layer\_output\_22\*-0.223328) + (demapping\_layer\_output\_23\*2.09956) + (demapping\_layer\_output\_24\*1.40194) );

output\_layer\_output\_47 = logistic( -1.29128 + (demapping\_layer\_output\_0\*-1.13034) + (demapping\_layer\_output\_1\*-0.317994) + (demapping\_layer\_output\_2\*0.360469) + (demapping\_layer\_output\_3\*-0.263561) + (demapping\_layer\_output\_4\*-0.90721) + (demapping\_layer\_output\_5\*1.52955) + (demapping\_layer\_output\_6\*-1.00217) + (demapping\_layer\_output\_7\*-1.26718) + (demapping\_layer\_output\_8\*1.36945) + (demapping\_layer\_output\_9\*-2.00826) + (demapping\_layer\_output\_10\*-1.87197) + (demapping\_layer\_output\_11\*-1.56359) + (demapping\_layer\_output\_12\*-3.78119) + (demapping\_layer\_output\_13\*-0.251166) + (demapping\_layer\_output\_14\*-0.659163) + (demapping\_layer\_output\_15\*0.180661) + (demapping\_layer\_output\_16\*0.592761) + (demapping\_layer\_output\_17\*0.781982) + (demapping\_layer\_output\_18\*0.62649) + (demapping\_layer\_output\_19\*-1.10801) + (demapping\_layer\_output\_20\*-0.472817) + (demapping\_layer\_output\_21\*-3.25645) + (demapping\_layer\_output\_22\*0.348877) + (demapping\_layer\_output\_23\*0.557393) + (demapping\_layer\_output\_24\*0.357421) );

output\_layer\_output\_48 = logistic( 0.284291 + (demapping\_layer\_output\_0\*-0.607394) + (demapping\_layer\_output\_1\*-0.26568) + (demapping\_layer\_output\_2\*1.31632) + (demapping\_layer\_output\_3\*-0.484636) + (demapping\_layer\_output\_4\*0.334384) + (demapping\_layer\_output\_5\*-0.106715) + (demapping\_layer\_output\_6\*-1.17822) + (demapping\_layer\_output\_7\*-0.992758) + (demapping\_layer\_output\_8\*-0.78868) + (demapping\_layer\_output\_9\*0.745517) + (demapping\_layer\_output\_10\*-0.968835) + (demapping\_layer\_output\_11\*-0.590039) + (demapping\_layer\_output\_12\*-0.156799) + (demapping\_layer\_output\_13\*0.879323) + (demapping\_layer\_output\_14\*-0.485917) + (demapping\_layer\_output\_15\*-0.372295) + (demapping\_layer\_output\_16\*0.315583) + (demapping\_layer\_output\_17\*0.248267) + (demapping\_layer\_output\_18\*0.602401) + (demapping\_layer\_output\_19\*0.431833) + (demapping\_layer\_output\_20\*0.422577) + (demapping\_layer\_output\_21\*0.271305) + (demapping\_layer\_output\_22\*-0.396824) + (demapping\_layer\_output\_23\*-0.419962) + (demapping\_layer\_output\_24\*0.0787562) );

output\_layer\_output\_49 = logistic( -1.02339 + (demapping\_layer\_output\_0\*1.40608) + (demapping\_layer\_output\_1\*2.67648) + (demapping\_layer\_output\_2\*0.275298) + (demapping\_layer\_output\_3\*0.0169712) + (demapping\_layer\_output\_4\*-2.70668) + (demapping\_layer\_output\_5\*0.362535) + (demapping\_layer\_output\_6\*-0.0200786) + (demapping\_layer\_output\_7\*0.432503) + (demapping\_layer\_output\_8\*-0.861948) + (demapping\_layer\_output\_9\*0.998466) + (demapping\_layer\_output\_10\*-0.295293) + (demapping\_layer\_output\_11\*0.43008) + (demapping\_layer\_output\_12\*-3.06643) + (demapping\_layer\_output\_13\*-0.749378) + (demapping\_layer\_output\_14\*-3.54759) + (demapping\_layer\_output\_15\*1.19346) + (demapping\_layer\_output\_16\*-0.711135) + (demapping\_layer\_output\_17\*0.202992) + (demapping\_layer\_output\_18\*-1.74841) + (demapping\_layer\_output\_19\*-1.24462) + (demapping\_layer\_output\_20\*-0.72171) + (demapping\_layer\_output\_21\*1.12464) + (demapping\_layer\_output\_22\*-0.697749) + (demapping\_layer\_output\_23\*-1.13744) + (demapping\_layer\_output\_24\*3.46398) );

output\_layer\_output\_50 = logistic( -1.71312 + (demapping\_layer\_output\_0\*1.10649) + (demapping\_layer\_output\_1\*-1.35592) + (demapping\_layer\_output\_2\*1.85382) + (demapping\_layer\_output\_3\*-0.946675) + (demapping\_layer\_output\_4\*0.400901) + (demapping\_layer\_output\_5\*-3.26466) + (demapping\_layer\_output\_6\*-1.15782) + (demapping\_layer\_output\_7\*-1.18053) + (demapping\_layer\_output\_8\*0.837672) + (demapping\_layer\_output\_9\*-1.50471) + (demapping\_layer\_output\_10\*0.189594) + (demapping\_layer\_output\_11\*1.34092) + (demapping\_layer\_output\_12\*1.30826) + (demapping\_layer\_output\_13\*0.649699) + (demapping\_layer\_output\_14\*-0.453641) + (demapping\_layer\_output\_15\*1.95181) + (demapping\_layer\_output\_16\*0.0385672) + (demapping\_layer\_output\_17\*-1.64911) + (demapping\_layer\_output\_18\*-1.89065) + (demapping\_layer\_output\_19\*-1.6067) + (demapping\_layer\_output\_20\*1.18512) + (demapping\_layer\_output\_21\*-0.934266) + (demapping\_layer\_output\_22\*-1.13292) + (demapping\_layer\_output\_23\*1.05397) + (demapping\_layer\_output\_24\*-0.177331) );

output\_layer\_output\_51 = logistic( -1.93283 + (demapping\_layer\_output\_0\*0.51029) + (demapping\_layer\_output\_1\*-1.15706) + (demapping\_layer\_output\_2\*2.53117) + (demapping\_layer\_output\_3\*0.360085) + (demapping\_layer\_output\_4\*-1.63504) + (demapping\_layer\_output\_5\*-0.0648638) + (demapping\_layer\_output\_6\*-0.274779) + (demapping\_layer\_output\_7\*-0.607261) + (demapping\_layer\_output\_8\*0.597355) + (demapping\_layer\_output\_9\*0.874827) + (demapping\_layer\_output\_10\*-0.523195) + (demapping\_layer\_output\_11\*1.34084) + (demapping\_layer\_output\_12\*0.591619) + (demapping\_layer\_output\_13\*0.325392) + (demapping\_layer\_output\_14\*-0.758652) + (demapping\_layer\_output\_15\*0.246566) + (demapping\_layer\_output\_16\*0.612135) + (demapping\_layer\_output\_17\*0.694334) + (demapping\_layer\_output\_18\*0.0272455) + (demapping\_layer\_output\_19\*-2.07907) + (demapping\_layer\_output\_20\*-0.0132772) + (demapping\_layer\_output\_21\*0.309458) + (demapping\_layer\_output\_22\*-0.873143) + (demapping\_layer\_output\_23\*-0.276639) + (demapping\_layer\_output\_24\*-0.660944) );

output\_layer\_output\_52 = logistic( -0.402911 + (demapping\_layer\_output\_0\*-0.29674) + (demapping\_layer\_output\_1\*-0.678175) + (demapping\_layer\_output\_2\*0.547323) + (demapping\_layer\_output\_3\*0.208817) + (demapping\_layer\_output\_4\*0.169547) + (demapping\_layer\_output\_5\*-0.779925) + (demapping\_layer\_output\_6\*-0.826495) + (demapping\_layer\_output\_7\*0.268353) + (demapping\_layer\_output\_8\*-0.368541) + (demapping\_layer\_output\_9\*0.307738) + (demapping\_layer\_output\_10\*0.19743) + (demapping\_layer\_output\_11\*1.23915) + (demapping\_layer\_output\_12\*0.674197) + (demapping\_layer\_output\_13\*0.314375) + (demapping\_layer\_output\_14\*-0.942237) + (demapping\_layer\_output\_15\*-1.19229) + (demapping\_layer\_output\_16\*3.02687) + (demapping\_layer\_output\_17\*1.01735) + (demapping\_layer\_output\_18\*-0.53385) + (demapping\_layer\_output\_19\*-0.607421) + (demapping\_layer\_output\_20\*0.219748) + (demapping\_layer\_output\_21\*0.692413) + (demapping\_layer\_output\_22\*-0.287593) + (demapping\_layer\_output\_23\*-0.583617) + (demapping\_layer\_output\_24\*-0.107178) );

output\_layer\_output\_53 = logistic( -1.22774 + (demapping\_layer\_output\_0\*-0.71334) + (demapping\_layer\_output\_1\*1.53558) + (demapping\_layer\_output\_2\*1.85813) + (demapping\_layer\_output\_3\*1.75257) + (demapping\_layer\_output\_4\*-0.87783) + (demapping\_layer\_output\_5\*-0.450492) + (demapping\_layer\_output\_6\*-1.49938) + (demapping\_layer\_output\_7\*0.724305) + (demapping\_layer\_output\_8\*-1.23331) + (demapping\_layer\_output\_9\*0.1179) + (demapping\_layer\_output\_10\*-0.250229) + (demapping\_layer\_output\_11\*-1.62627) + (demapping\_layer\_output\_12\*-0.386135) + (demapping\_layer\_output\_13\*1.28394) + (demapping\_layer\_output\_14\*0.357012) + (demapping\_layer\_output\_15\*-0.361314) + (demapping\_layer\_output\_16\*1.76429) + (demapping\_layer\_output\_17\*1.19415) + (demapping\_layer\_output\_18\*0.38808) + (demapping\_layer\_output\_19\*-1.61167) + (demapping\_layer\_output\_20\*-1.43134) + (demapping\_layer\_output\_21\*0.778361) + (demapping\_layer\_output\_22\*-0.600525) + (demapping\_layer\_output\_23\*-0.132489) + (demapping\_layer\_output\_24\*0.869715) );

output\_layer\_output\_54 = logistic( -2.70866 + (demapping\_layer\_output\_0\*5.96637) + (demapping\_layer\_output\_1\*-1.11717) + (demapping\_layer\_output\_2\*0.415327) + (demapping\_layer\_output\_3\*0.0388916) + (demapping\_layer\_output\_4\*-1.94211) + (demapping\_layer\_output\_5\*-1.80987) + (demapping\_layer\_output\_6\*-0.879466) + (demapping\_layer\_output\_7\*-1.56408) + (demapping\_layer\_output\_8\*1.58669) + (demapping\_layer\_output\_9\*1.21608) + (demapping\_layer\_output\_10\*-1.96936) + (demapping\_layer\_output\_11\*-0.113853) + (demapping\_layer\_output\_12\*-2.66482) + (demapping\_layer\_output\_13\*0.115553) + (demapping\_layer\_output\_14\*-1.67715) + (demapping\_layer\_output\_15\*0.443493) + (demapping\_layer\_output\_16\*2.81396) + (demapping\_layer\_output\_17\*-5.80841) + (demapping\_layer\_output\_18\*5.62856) + (demapping\_layer\_output\_19\*-3.28089) + (demapping\_layer\_output\_20\*0.120089) + (demapping\_layer\_output\_21\*-0.119993) + (demapping\_layer\_output\_22\*-1.88346) + (demapping\_layer\_output\_23\*2.68081) + (demapping\_layer\_output\_24\*-3.32567) );

output\_layer\_output\_55 = logistic( -0.216781 + (demapping\_layer\_output\_0\*-0.557441) + (demapping\_layer\_output\_1\*-0.133332) + (demapping\_layer\_output\_2\*0.677565) + (demapping\_layer\_output\_3\*-0.0494217) + (demapping\_layer\_output\_4\*-0.220551) + (demapping\_layer\_output\_5\*0.400364) + (demapping\_layer\_output\_6\*-0.201158) + (demapping\_layer\_output\_7\*0.220388) + (demapping\_layer\_output\_8\*-0.524958) + (demapping\_layer\_output\_9\*0.192176) + (demapping\_layer\_output\_10\*-0.395652) + (demapping\_layer\_output\_11\*-0.0713337) + (demapping\_layer\_output\_12\*-0.389493) + (demapping\_layer\_output\_13\*-0.0789839) + (demapping\_layer\_output\_14\*-0.398507) + (demapping\_layer\_output\_15\*-0.317417) + (demapping\_layer\_output\_16\*1.06558) + (demapping\_layer\_output\_17\*-0.177773) + (demapping\_layer\_output\_18\*0.557216) + (demapping\_layer\_output\_19\*-0.161051) + (demapping\_layer\_output\_20\*-0.109685) + (demapping\_layer\_output\_21\*0.248945) + (demapping\_layer\_output\_22\*-0.136377) + (demapping\_layer\_output\_23\*0.216969) + (demapping\_layer\_output\_24\*0.305406) );

output\_layer\_output\_56 = logistic( -1.29542 + (demapping\_layer\_output\_0\*0.998845) + (demapping\_layer\_output\_1\*-0.015187) + (demapping\_layer\_output\_2\*1.10457) + (demapping\_layer\_output\_3\*-0.427082) + (demapping\_layer\_output\_4\*-2.07012) + (demapping\_layer\_output\_5\*-0.777839) + (demapping\_layer\_output\_6\*-0.65238) + (demapping\_layer\_output\_7\*-1.60931) + (demapping\_layer\_output\_8\*-2.21006) + (demapping\_layer\_output\_9\*-0.764372) + (demapping\_layer\_output\_10\*-4.35686) + (demapping\_layer\_output\_11\*-2.46318) + (demapping\_layer\_output\_12\*-1.52097) + (demapping\_layer\_output\_13\*2.83819) + (demapping\_layer\_output\_14\*-0.620174) + (demapping\_layer\_output\_15\*-0.30424) + (demapping\_layer\_output\_16\*1.6138) + (demapping\_layer\_output\_17\*0.402662) + (demapping\_layer\_output\_18\*0.874919) + (demapping\_layer\_output\_19\*-1.89588) + (demapping\_layer\_output\_20\*-2.12774) + (demapping\_layer\_output\_21\*0.400729) + (demapping\_layer\_output\_22\*0.417868) + (demapping\_layer\_output\_23\*0.0808138) + (demapping\_layer\_output\_24\*0.295643) );

output\_layer\_output\_57 = logistic( -0.932724 + (demapping\_layer\_output\_0\*-0.838165) + (demapping\_layer\_output\_1\*0.504005) + (demapping\_layer\_output\_2\*1.14199) + (demapping\_layer\_output\_3\*-0.856161) + (demapping\_layer\_output\_4\*-0.15324) + (demapping\_layer\_output\_5\*0.930156) + (demapping\_layer\_output\_6\*-0.458748) + (demapping\_layer\_output\_7\*-0.186622) + (demapping\_layer\_output\_8\*-0.100816) + (demapping\_layer\_output\_9\*-0.300827) + (demapping\_layer\_output\_10\*-0.303143) + (demapping\_layer\_output\_11\*-0.788075) + (demapping\_layer\_output\_12\*-0.627582) + (demapping\_layer\_output\_13\*-0.923112) + (demapping\_layer\_output\_14\*-3.0146) + (demapping\_layer\_output\_15\*0.548291) + (demapping\_layer\_output\_16\*-0.939401) + (demapping\_layer\_output\_17\*0.16775) + (demapping\_layer\_output\_18\*0.400645) + (demapping\_layer\_output\_19\*-1.11712) + (demapping\_layer\_output\_20\*-0.126616) + (demapping\_layer\_output\_21\*0.413235) + (demapping\_layer\_output\_22\*0.0476764) + (demapping\_layer\_output\_23\*-1.87639) + (demapping\_layer\_output\_24\*-0.111633) );

output\_layer\_output\_58 = logistic( -0.511091 + (demapping\_layer\_output\_0\*1.15382) + (demapping\_layer\_output\_1\*-1.26936) + (demapping\_layer\_output\_2\*0.969432) + (demapping\_layer\_output\_3\*-0.116508) + (demapping\_layer\_output\_4\*1.17329) + (demapping\_layer\_output\_5\*1.27415) + (demapping\_layer\_output\_6\*0.150458) + (demapping\_layer\_output\_7\*-0.00472123) + (demapping\_layer\_output\_8\*-0.827116) + (demapping\_layer\_output\_9\*-0.170182) + (demapping\_layer\_output\_10\*-0.889182) + (demapping\_layer\_output\_11\*0.135233) + (demapping\_layer\_output\_12\*-1.3778) + (demapping\_layer\_output\_13\*1.1607) + (demapping\_layer\_output\_14\*-1.44616) + (demapping\_layer\_output\_15\*0.557424) + (demapping\_layer\_output\_16\*0.848846) + (demapping\_layer\_output\_17\*-0.303964) + (demapping\_layer\_output\_18\*-0.335623) + (demapping\_layer\_output\_19\*-0.942117) + (demapping\_layer\_output\_20\*0.274796) + (demapping\_layer\_output\_21\*-0.886187) + (demapping\_layer\_output\_22\*-2.2282) + (demapping\_layer\_output\_23\*0.329935) + (demapping\_layer\_output\_24\*-0.26568) );

output\_layer\_output\_59 = logistic( -0.949359 + (demapping\_layer\_output\_0\*-0.550999) + (demapping\_layer\_output\_1\*-0.631816) + (demapping\_layer\_output\_2\*0.579545) + (demapping\_layer\_output\_3\*-0.205482) + (demapping\_layer\_output\_4\*-0.569859) + (demapping\_layer\_output\_5\*-0.463487) + (demapping\_layer\_output\_6\*-3.3094) + (demapping\_layer\_output\_7\*-0.498631) + (demapping\_layer\_output\_8\*-0.288756) + (demapping\_layer\_output\_9\*-0.135866) + (demapping\_layer\_output\_10\*-1.09773) + (demapping\_layer\_output\_11\*-1.07303) + (demapping\_layer\_output\_12\*-0.796569) + (demapping\_layer\_output\_13\*-0.443009) + (demapping\_layer\_output\_14\*-0.85562) + (demapping\_layer\_output\_15\*-4.78118) + (demapping\_layer\_output\_16\*1.31413) + (demapping\_layer\_output\_17\*-0.434445) + (demapping\_layer\_output\_18\*-0.666215) + (demapping\_layer\_output\_19\*-1.6911) + (demapping\_layer\_output\_20\*-1.52586) + (demapping\_layer\_output\_21\*-0.0161631) + (demapping\_layer\_output\_22\*-1.0597) + (demapping\_layer\_output\_23\*0.760263) + (demapping\_layer\_output\_24\*-0.675122) );

output\_layer\_output\_60 = logistic( -0.11257 + (demapping\_layer\_output\_0\*-2.77284) + (demapping\_layer\_output\_1\*-3.20592) + (demapping\_layer\_output\_2\*2.05609) + (demapping\_layer\_output\_3\*-0.185594) + (demapping\_layer\_output\_4\*-1.51753) + (demapping\_layer\_output\_5\*0.0110772) + (demapping\_layer\_output\_6\*-1.58336) + (demapping\_layer\_output\_7\*-0.681682) + (demapping\_layer\_output\_8\*0.263279) + (demapping\_layer\_output\_9\*-1.52108) + (demapping\_layer\_output\_10\*-2.47869) + (demapping\_layer\_output\_11\*-1.68012) + (demapping\_layer\_output\_12\*-3.04153) + (demapping\_layer\_output\_13\*1.72746) + (demapping\_layer\_output\_14\*0.160921) + (demapping\_layer\_output\_15\*1.39103) + (demapping\_layer\_output\_16\*0.840984) + (demapping\_layer\_output\_17\*4.1666) + (demapping\_layer\_output\_18\*-0.457403) + (demapping\_layer\_output\_19\*-0.604132) + (demapping\_layer\_output\_20\*-1.02965) + (demapping\_layer\_output\_21\*0.330196) + (demapping\_layer\_output\_22\*-0.230907) + (demapping\_layer\_output\_23\*2.18949) + (demapping\_layer\_output\_24\*0.112791) );

output\_layer\_output\_61 = logistic( -1.59023 + (demapping\_layer\_output\_0\*-3.47943) + (demapping\_layer\_output\_1\*-0.284109) + (demapping\_layer\_output\_2\*2.20839) + (demapping\_layer\_output\_3\*-0.998404) + (demapping\_layer\_output\_4\*-4.04452) + (demapping\_layer\_output\_5\*-0.776334) + (demapping\_layer\_output\_6\*0.531139) + (demapping\_layer\_output\_7\*-0.963922) + (demapping\_layer\_output\_8\*-0.642934) + (demapping\_layer\_output\_9\*-0.932544) + (demapping\_layer\_output\_10\*0.0877035) + (demapping\_layer\_output\_11\*-1.10234) + (demapping\_layer\_output\_12\*-3.10914) + (demapping\_layer\_output\_13\*0.578529) + (demapping\_layer\_output\_14\*-1.01073) + (demapping\_layer\_output\_15\*1.23357) + (demapping\_layer\_output\_16\*0.310147) + (demapping\_layer\_output\_17\*2.39091) + (demapping\_layer\_output\_18\*1.10503) + (demapping\_layer\_output\_19\*-1.56866) + (demapping\_layer\_output\_20\*0.24469) + (demapping\_layer\_output\_21\*2.13741) + (demapping\_layer\_output\_22\*-1.0719) + (demapping\_layer\_output\_23\*-0.653682) + (demapping\_layer\_output\_24\*-0.315318) );

output\_layer\_output\_62 = logistic( 0.532851 + (demapping\_layer\_output\_0\*0.117022) + (demapping\_layer\_output\_1\*-0.10435) + (demapping\_layer\_output\_2\*0.789404) + (demapping\_layer\_output\_3\*0.412714) + (demapping\_layer\_output\_4\*0.493615) + (demapping\_layer\_output\_5\*-0.053813) + (demapping\_layer\_output\_6\*-0.525191) + (demapping\_layer\_output\_7\*-0.326452) + (demapping\_layer\_output\_8\*-0.275518) + (demapping\_layer\_output\_9\*-0.230877) + (demapping\_layer\_output\_10\*-0.8886) + (demapping\_layer\_output\_11\*-0.533853) + (demapping\_layer\_output\_12\*-0.495117) + (demapping\_layer\_output\_13\*0.0933237) + (demapping\_layer\_output\_14\*-0.591408) + (demapping\_layer\_output\_15\*0.806497) + (demapping\_layer\_output\_16\*0.727298) + (demapping\_layer\_output\_17\*-0.131246) + (demapping\_layer\_output\_18\*0.189098) + (demapping\_layer\_output\_19\*0.369066) + (demapping\_layer\_output\_20\*0.14304) + (demapping\_layer\_output\_21\*0.163096) + (demapping\_layer\_output\_22\*-1.51512) + (demapping\_layer\_output\_23\*-0.48607) + (demapping\_layer\_output\_24\*-0.260927) );

output\_layer\_output\_63 = logistic( -0.0759001 + (demapping\_layer\_output\_0\*0.177578) + (demapping\_layer\_output\_1\*-0.570738) + (demapping\_layer\_output\_2\*1.44952) + (demapping\_layer\_output\_3\*-1.19848) + (demapping\_layer\_output\_4\*-0.0345417) + (demapping\_layer\_output\_5\*-1.10674) + (demapping\_layer\_output\_6\*0.170891) + (demapping\_layer\_output\_7\*0.0579072) + (demapping\_layer\_output\_8\*-0.667925) + (demapping\_layer\_output\_9\*-0.000218601) + (demapping\_layer\_output\_10\*-0.929148) + (demapping\_layer\_output\_11\*-0.266405) + (demapping\_layer\_output\_12\*-0.221998) + (demapping\_layer\_output\_13\*0.320682) + (demapping\_layer\_output\_14\*-0.426356) + (demapping\_layer\_output\_15\*0.354806) + (demapping\_layer\_output\_16\*-0.475885) + (demapping\_layer\_output\_17\*-0.460752) + (demapping\_layer\_output\_18\*0.152075) + (demapping\_layer\_output\_19\*0.00607601) + (demapping\_layer\_output\_20\*-0.305879) + (demapping\_layer\_output\_21\*-0.294202) + (demapping\_layer\_output\_22\*0.277875) + (demapping\_layer\_output\_23\*-1.19231) + (demapping\_layer\_output\_24\*-0.549685) );

output\_layer\_output\_64 = logistic( -0.563946 + (demapping\_layer\_output\_0\*0.968562) + (demapping\_layer\_output\_1\*-0.198944) + (demapping\_layer\_output\_2\*0.709901) + (demapping\_layer\_output\_3\*-0.0340405) + (demapping\_layer\_output\_4\*0.211313) + (demapping\_layer\_output\_5\*-2.07333) + (demapping\_layer\_output\_6\*-0.29847) + (demapping\_layer\_output\_7\*0.0824844) + (demapping\_layer\_output\_8\*0.251051) + (demapping\_layer\_output\_9\*0.0147753) + (demapping\_layer\_output\_10\*-0.114076) + (demapping\_layer\_output\_11\*0.286597) + (demapping\_layer\_output\_12\*-0.388219) + (demapping\_layer\_output\_13\*-0.356413) + (demapping\_layer\_output\_14\*-0.229707) + (demapping\_layer\_output\_15\*1.12574) + (demapping\_layer\_output\_16\*-0.229535) + (demapping\_layer\_output\_17\*-0.52614) + (demapping\_layer\_output\_18\*0.107342) + (demapping\_layer\_output\_19\*-0.756457) + (demapping\_layer\_output\_20\*0.636495) + (demapping\_layer\_output\_21\*0.189028) + (demapping\_layer\_output\_22\*-0.726079) + (demapping\_layer\_output\_23\*0.213559) + (demapping\_layer\_output\_24\*-0.19954) );

output\_layer\_output\_65 = logistic( -1.48799 + (demapping\_layer\_output\_0\*-0.255977) + (demapping\_layer\_output\_1\*0.119042) + (demapping\_layer\_output\_2\*-0.492954) + (demapping\_layer\_output\_3\*-0.353134) + (demapping\_layer\_output\_4\*-4.31687) + (demapping\_layer\_output\_5\*-1.07582) + (demapping\_layer\_output\_6\*0.51679) + (demapping\_layer\_output\_7\*-0.548152) + (demapping\_layer\_output\_8\*-0.651874) + (demapping\_layer\_output\_9\*-3.67667) + (demapping\_layer\_output\_10\*-1.05325) + (demapping\_layer\_output\_11\*0.0261346) + (demapping\_layer\_output\_12\*-1.25292) + (demapping\_layer\_output\_13\*-1.07246) + (demapping\_layer\_output\_14\*-0.990505) + (demapping\_layer\_output\_15\*-0.934908) + (demapping\_layer\_output\_16\*1.33036) + (demapping\_layer\_output\_17\*0.382996) + (demapping\_layer\_output\_18\*-0.362987) + (demapping\_layer\_output\_19\*-1.8656) + (demapping\_layer\_output\_20\*-0.126733) + (demapping\_layer\_output\_21\*-2.3491) + (demapping\_layer\_output\_22\*-1.00799) + (demapping\_layer\_output\_23\*-0.405818) + (demapping\_layer\_output\_24\*0.232684) );

output\_layer\_output\_66 = logistic( -0.337286 + (demapping\_layer\_output\_0\*-0.411531) + (demapping\_layer\_output\_1\*0.120828) + (demapping\_layer\_output\_2\*0.420896) + (demapping\_layer\_output\_3\*-1.58133) + (demapping\_layer\_output\_4\*-0.288793) + (demapping\_layer\_output\_5\*0.620857) + (demapping\_layer\_output\_6\*0.0626913) + (demapping\_layer\_output\_7\*-0.740757) + (demapping\_layer\_output\_8\*0.448094) + (demapping\_layer\_output\_9\*-0.0941067) + (demapping\_layer\_output\_10\*-0.0785554) + (demapping\_layer\_output\_11\*0.251727) + (demapping\_layer\_output\_12\*-1.12738) + (demapping\_layer\_output\_13\*-0.237366) + (demapping\_layer\_output\_14\*-1.31528) + (demapping\_layer\_output\_15\*-0.947765) + (demapping\_layer\_output\_16\*-0.823422) + (demapping\_layer\_output\_17\*0.143904) + (demapping\_layer\_output\_18\*0.66817) + (demapping\_layer\_output\_19\*-0.527322) + (demapping\_layer\_output\_20\*0.162843) + (demapping\_layer\_output\_21\*-0.503421) + (demapping\_layer\_output\_22\*-1.32983) + (demapping\_layer\_output\_23\*-1.67367) + (demapping\_layer\_output\_24\*-0.282127) );

output\_layer\_output\_67 = logistic( -1.39525 + (demapping\_layer\_output\_0\*-0.187669) + (demapping\_layer\_output\_1\*0.118233) + (demapping\_layer\_output\_2\*0.966419) + (demapping\_layer\_output\_3\*0.517806) + (demapping\_layer\_output\_4\*0.185395) + (demapping\_layer\_output\_5\*-0.418447) + (demapping\_layer\_output\_6\*-0.156365) + (demapping\_layer\_output\_7\*-0.129468) + (demapping\_layer\_output\_8\*-0.0301509) + (demapping\_layer\_output\_9\*0.253354) + (demapping\_layer\_output\_10\*-0.640365) + (demapping\_layer\_output\_11\*-0.532258) + (demapping\_layer\_output\_12\*0.697411) + (demapping\_layer\_output\_13\*-0.580075) + (demapping\_layer\_output\_14\*0.133077) + (demapping\_layer\_output\_15\*0.087652) + (demapping\_layer\_output\_16\*0.316062) + (demapping\_layer\_output\_17\*0.0786997) + (demapping\_layer\_output\_18\*0.190713) + (demapping\_layer\_output\_19\*-1.29728) + (demapping\_layer\_output\_20\*-0.141963) + (demapping\_layer\_output\_21\*0.411332) + (demapping\_layer\_output\_22\*0.319245) + (demapping\_layer\_output\_23\*0.214655) + (demapping\_layer\_output\_24\*0.24251) );

output\_layer\_output\_68 = logistic( -0.521916 + (demapping\_layer\_output\_0\*0.313095) + (demapping\_layer\_output\_1\*-0.229075) + (demapping\_layer\_output\_2\*0.579993) + (demapping\_layer\_output\_3\*-0.0225056) + (demapping\_layer\_output\_4\*-0.152681) + (demapping\_layer\_output\_5\*-0.729587) + (demapping\_layer\_output\_6\*-0.533928) + (demapping\_layer\_output\_7\*-1.27392) + (demapping\_layer\_output\_8\*0.360116) + (demapping\_layer\_output\_9\*-0.12868) + (demapping\_layer\_output\_10\*0.145274) + (demapping\_layer\_output\_11\*0.75476) + (demapping\_layer\_output\_12\*0.00956219) + (demapping\_layer\_output\_13\*-0.0812566) + (demapping\_layer\_output\_14\*-0.00337175) + (demapping\_layer\_output\_15\*0.404923) + (demapping\_layer\_output\_16\*0.138727) + (demapping\_layer\_output\_17\*0.357521) + (demapping\_layer\_output\_18\*0.021497) + (demapping\_layer\_output\_19\*-0.468174) + (demapping\_layer\_output\_20\*-0.197867) + (demapping\_layer\_output\_21\*0.284204) + (demapping\_layer\_output\_22\*-0.443769) + (demapping\_layer\_output\_23\*-0.0867541) + (demapping\_layer\_output\_24\*-0.500237) );

output\_layer\_output\_69 = logistic( -1.68837 + (demapping\_layer\_output\_0\*0.345023) + (demapping\_layer\_output\_1\*0.343996) + (demapping\_layer\_output\_2\*1.74699) + (demapping\_layer\_output\_3\*0.369362) + (demapping\_layer\_output\_4\*-0.148915) + (demapping\_layer\_output\_5\*0.941328) + (demapping\_layer\_output\_6\*-0.426461) + (demapping\_layer\_output\_7\*-0.523759) + (demapping\_layer\_output\_8\*-0.429525) + (demapping\_layer\_output\_9\*0.0894838) + (demapping\_layer\_output\_10\*-0.297356) + (demapping\_layer\_output\_11\*-0.0616271) + (demapping\_layer\_output\_12\*1.36858) + (demapping\_layer\_output\_13\*-0.264652) + (demapping\_layer\_output\_14\*-0.652842) + (demapping\_layer\_output\_15\*0.731733) + (demapping\_layer\_output\_16\*1.0296) + (demapping\_layer\_output\_17\*0.0664278) + (demapping\_layer\_output\_18\*0.803023) + (demapping\_layer\_output\_19\*-1.66112) + (demapping\_layer\_output\_20\*0.115263) + (demapping\_layer\_output\_21\*0.58475) + (demapping\_layer\_output\_22\*-0.671992) + (demapping\_layer\_output\_23\*-0.557684) + (demapping\_layer\_output\_24\*-0.707778) );

output\_layer\_output\_70 = logistic( -1.66363 + (demapping\_layer\_output\_0\*-4.47537) + (demapping\_layer\_output\_1\*-0.474492) + (demapping\_layer\_output\_2\*2.39258) + (demapping\_layer\_output\_3\*-0.645512) + (demapping\_layer\_output\_4\*-0.839466) + (demapping\_layer\_output\_5\*1.84536) + (demapping\_layer\_output\_6\*-4.46402) + (demapping\_layer\_output\_7\*-1.02388) + (demapping\_layer\_output\_8\*-0.0998494) + (demapping\_layer\_output\_9\*-1.94316) + (demapping\_layer\_output\_10\*-1.22335) + (demapping\_layer\_output\_11\*-0.285002) + (demapping\_layer\_output\_12\*0.902721) + (demapping\_layer\_output\_13\*-0.17992) + (demapping\_layer\_output\_14\*-0.783148) + (demapping\_layer\_output\_15\*1.2896) + (demapping\_layer\_output\_16\*1.4888) + (demapping\_layer\_output\_17\*0.338022) + (demapping\_layer\_output\_18\*-0.0396816) + (demapping\_layer\_output\_19\*-2.2356) + (demapping\_layer\_output\_20\*0.285762) + (demapping\_layer\_output\_21\*0.338749) + (demapping\_layer\_output\_22\*-1.57045) + (demapping\_layer\_output\_23\*0.482921) + (demapping\_layer\_output\_24\*-0.082423) );

output\_layer\_output\_71 = logistic( -0.537564 + (demapping\_layer\_output\_0\*-1.7252) + (demapping\_layer\_output\_1\*-0.394665) + (demapping\_layer\_output\_2\*0.533976) + (demapping\_layer\_output\_3\*-0.0225426) + (demapping\_layer\_output\_4\*-0.192488) + (demapping\_layer\_output\_5\*-1.75319) + (demapping\_layer\_output\_6\*-0.401581) + (demapping\_layer\_output\_7\*-1.89078) + (demapping\_layer\_output\_8\*1.39173) + (demapping\_layer\_output\_9\*-0.844887) + (demapping\_layer\_output\_10\*-0.632303) + (demapping\_layer\_output\_11\*-1.15845) + (demapping\_layer\_output\_12\*-0.846768) + (demapping\_layer\_output\_13\*-1.36258) + (demapping\_layer\_output\_14\*0.167343) + (demapping\_layer\_output\_15\*1.21054) + (demapping\_layer\_output\_16\*0.102049) + (demapping\_layer\_output\_17\*0.772995) + (demapping\_layer\_output\_18\*0.461002) + (demapping\_layer\_output\_19\*-0.96082) + (demapping\_layer\_output\_20\*0.552374) + (demapping\_layer\_output\_21\*0.93761) + (demapping\_layer\_output\_22\*-0.607787) + (demapping\_layer\_output\_23\*0.225099) + (demapping\_layer\_output\_24\*0.463362) );

output\_layer\_output\_72 = logistic( -0.0443973 + (demapping\_layer\_output\_0\*-0.624461) + (demapping\_layer\_output\_1\*-0.283822) + (demapping\_layer\_output\_2\*1.44078) + (demapping\_layer\_output\_3\*0.055175) + (demapping\_layer\_output\_4\*0.00309005) + (demapping\_layer\_output\_5\*0.219052) + (demapping\_layer\_output\_6\*-0.756653) + (demapping\_layer\_output\_7\*-0.807497) + (demapping\_layer\_output\_8\*0.0853171) + (demapping\_layer\_output\_9\*0.376289) + (demapping\_layer\_output\_10\*0.252841) + (demapping\_layer\_output\_11\*0.241977) + (demapping\_layer\_output\_12\*0.338864) + (demapping\_layer\_output\_13\*0.123492) + (demapping\_layer\_output\_14\*-2.21239) + (demapping\_layer\_output\_15\*-0.568114) + (demapping\_layer\_output\_16\*0.338349) + (demapping\_layer\_output\_17\*0.483853) + (demapping\_layer\_output\_18\*-0.0437768) + (demapping\_layer\_output\_19\*-0.0648993) + (demapping\_layer\_output\_20\*-0.209855) + (demapping\_layer\_output\_21\*0.154431) + (demapping\_layer\_output\_22\*0.396309) + (demapping\_layer\_output\_23\*0.391761) + (demapping\_layer\_output\_24\*-0.227512) );

output\_layer\_output\_73 = logistic( -1.52252 + (demapping\_layer\_output\_0\*5.97101) + (demapping\_layer\_output\_1\*-1.21907) + (demapping\_layer\_output\_2\*0.791051) + (demapping\_layer\_output\_3\*0.180087) + (demapping\_layer\_output\_4\*-3.48083) + (demapping\_layer\_output\_5\*-2.99513) + (demapping\_layer\_output\_6\*-2.60081) + (demapping\_layer\_output\_7\*-1.99924) + (demapping\_layer\_output\_8\*-0.833055) + (demapping\_layer\_output\_9\*-0.801629) + (demapping\_layer\_output\_10\*-1.0053) + (demapping\_layer\_output\_11\*-2.5599) + (demapping\_layer\_output\_12\*-2.07131) + (demapping\_layer\_output\_13\*4.18944) + (demapping\_layer\_output\_14\*-3.40838) + (demapping\_layer\_output\_15\*1.41719) + (demapping\_layer\_output\_16\*1.82145) + (demapping\_layer\_output\_17\*4.06623) + (demapping\_layer\_output\_18\*-0.290993) + (demapping\_layer\_output\_19\*-1.63817) + (demapping\_layer\_output\_20\*-1.51325) + (demapping\_layer\_output\_21\*-2.30429) + (demapping\_layer\_output\_22\*-1.65258) + (demapping\_layer\_output\_23\*0.302487) + (demapping\_layer\_output\_24\*4.56749) );

output\_layer\_output\_74 = logistic( -1.12623 + (demapping\_layer\_output\_0\*-2.21722) + (demapping\_layer\_output\_1\*-0.302309) + (demapping\_layer\_output\_2\*0.872888) + (demapping\_layer\_output\_3\*0.400151) + (demapping\_layer\_output\_4\*-0.204997) + (demapping\_layer\_output\_5\*-0.952317) + (demapping\_layer\_output\_6\*1.71384) + (demapping\_layer\_output\_7\*-0.7787) + (demapping\_layer\_output\_8\*-2.50794) + (demapping\_layer\_output\_9\*0.241715) + (demapping\_layer\_output\_10\*-0.917152) + (demapping\_layer\_output\_11\*-0.543367) + (demapping\_layer\_output\_12\*-1.76777) + (demapping\_layer\_output\_13\*-0.11723) + (demapping\_layer\_output\_14\*-1.86954) + (demapping\_layer\_output\_15\*1.73858) + (demapping\_layer\_output\_16\*0.645488) + (demapping\_layer\_output\_17\*0.748741) + (demapping\_layer\_output\_18\*-0.0588349) + (demapping\_layer\_output\_19\*-1.4576) + (demapping\_layer\_output\_20\*0.0484453) + (demapping\_layer\_output\_21\*2.0566) + (demapping\_layer\_output\_22\*-1.36278) + (demapping\_layer\_output\_23\*0.327539) + (demapping\_layer\_output\_24\*-0.113358) );

output\_layer\_output\_75 = logistic( -0.58117 + (demapping\_layer\_output\_0\*0.385515) + (demapping\_layer\_output\_1\*-0.188972) + (demapping\_layer\_output\_2\*-0.0476453) + (demapping\_layer\_output\_3\*-1.50997) + (demapping\_layer\_output\_4\*-1.71252) + (demapping\_layer\_output\_5\*-1.15759) + (demapping\_layer\_output\_6\*1.19343) + (demapping\_layer\_output\_7\*-1.14506) + (demapping\_layer\_output\_8\*-0.673907) + (demapping\_layer\_output\_9\*-0.152256) + (demapping\_layer\_output\_10\*-3.93234) + (demapping\_layer\_output\_11\*1.25205) + (demapping\_layer\_output\_12\*-0.539769) + (demapping\_layer\_output\_13\*-1.16619) + (demapping\_layer\_output\_14\*-0.762025) + (demapping\_layer\_output\_15\*-0.75903) + (demapping\_layer\_output\_16\*-0.201124) + (demapping\_layer\_output\_17\*-0.188273) + (demapping\_layer\_output\_18\*-0.537622) + (demapping\_layer\_output\_19\*-0.748673) + (demapping\_layer\_output\_20\*-1.28741) + (demapping\_layer\_output\_21\*1.54508) + (demapping\_layer\_output\_22\*-0.251731) + (demapping\_layer\_output\_23\*-4.76579) + (demapping\_layer\_output\_24\*-0.403525) );

output\_layer\_output\_76 = logistic( -1.07793 + (demapping\_layer\_output\_0\*-0.949952) + (demapping\_layer\_output\_1\*0.372768) + (demapping\_layer\_output\_2\*0.84731) + (demapping\_layer\_output\_3\*0.0218353) + (demapping\_layer\_output\_4\*0.0364585) + (demapping\_layer\_output\_5\*-0.0833567) + (demapping\_layer\_output\_6\*-0.242877) + (demapping\_layer\_output\_7\*-2.27429) + (demapping\_layer\_output\_8\*-1.86876) + (demapping\_layer\_output\_9\*0.206529) + (demapping\_layer\_output\_10\*-0.137049) + (demapping\_layer\_output\_11\*-0.220152) + (demapping\_layer\_output\_12\*-0.339809) + (demapping\_layer\_output\_13\*1.42639) + (demapping\_layer\_output\_14\*-0.307612) + (demapping\_layer\_output\_15\*0.501184) + (demapping\_layer\_output\_16\*0.704773) + (demapping\_layer\_output\_17\*-0.134009) + (demapping\_layer\_output\_18\*0.0168901) + (demapping\_layer\_output\_19\*-1.22576) + (demapping\_layer\_output\_20\*-0.210653) + (demapping\_layer\_output\_21\*1.28562) + (demapping\_layer\_output\_22\*-0.857) + (demapping\_layer\_output\_23\*-0.262519) + (demapping\_layer\_output\_24\*-0.199372) );

output\_layer\_output\_77 = logistic( -0.272044 + (demapping\_layer\_output\_0\*-1.21331) + (demapping\_layer\_output\_1\*0.0713242) + (demapping\_layer\_output\_2\*0.566322) + (demapping\_layer\_output\_3\*-0.420057) + (demapping\_layer\_output\_4\*-0.245665) + (demapping\_layer\_output\_5\*-0.562257) + (demapping\_layer\_output\_6\*0.0629299) + (demapping\_layer\_output\_7\*-0.612425) + (demapping\_layer\_output\_8\*-1.855) + (demapping\_layer\_output\_9\*-0.274732) + (demapping\_layer\_output\_10\*-3.05258) + (demapping\_layer\_output\_11\*-1.18817) + (demapping\_layer\_output\_12\*-0.0970938) + (demapping\_layer\_output\_13\*1.50976) + (demapping\_layer\_output\_14\*-1.04975) + (demapping\_layer\_output\_15\*0.543115) + (demapping\_layer\_output\_16\*4.5499) + (demapping\_layer\_output\_17\*0.810621) + (demapping\_layer\_output\_18\*0.321849) + (demapping\_layer\_output\_19\*-1.79742) + (demapping\_layer\_output\_20\*-0.422887) + (demapping\_layer\_output\_21\*0.930783) + (demapping\_layer\_output\_22\*0.608766) + (demapping\_layer\_output\_23\*1.36466) + (demapping\_layer\_output\_24\*0.0992554) );

output\_layer\_output\_78 = logistic( -0.739964 + (demapping\_layer\_output\_0\*-2.76222) + (demapping\_layer\_output\_1\*-0.148113) + (demapping\_layer\_output\_2\*0.426452) + (demapping\_layer\_output\_3\*-0.0815361) + (demapping\_layer\_output\_4\*1.3872) + (demapping\_layer\_output\_5\*-0.110495) + (demapping\_layer\_output\_6\*-0.707268) + (demapping\_layer\_output\_7\*-0.657499) + (demapping\_layer\_output\_8\*1.61484) + (demapping\_layer\_output\_9\*-1.13366) + (demapping\_layer\_output\_10\*-2.58335) + (demapping\_layer\_output\_11\*-1.25567) + (demapping\_layer\_output\_12\*-2.41265) + (demapping\_layer\_output\_13\*-0.113485) + (demapping\_layer\_output\_14\*-0.0581661) + (demapping\_layer\_output\_15\*-1.21243) + (demapping\_layer\_output\_16\*0.354364) + (demapping\_layer\_output\_17\*-0.995251) + (demapping\_layer\_output\_18\*-1.24801) + (demapping\_layer\_output\_19\*-1.03142) + (demapping\_layer\_output\_20\*-3.35919) + (demapping\_layer\_output\_21\*-1.30194) + (demapping\_layer\_output\_22\*-2.47615) + (demapping\_layer\_output\_23\*0.342001) + (demapping\_layer\_output\_24\*0.203483) );

output\_layer\_output\_79 = logistic( -0.957268 + (demapping\_layer\_output\_0\*-2.36149) + (demapping\_layer\_output\_1\*0.0248703) + (demapping\_layer\_output\_2\*0.965316) + (demapping\_layer\_output\_3\*-0.579999) + (demapping\_layer\_output\_4\*0.873359) + (demapping\_layer\_output\_5\*-0.75041) + (demapping\_layer\_output\_6\*-0.717674) + (demapping\_layer\_output\_7\*-0.173303) + (demapping\_layer\_output\_8\*0.0691962) + (demapping\_layer\_output\_9\*-0.680738) + (demapping\_layer\_output\_10\*-0.84177) + (demapping\_layer\_output\_11\*-2.15996) + (demapping\_layer\_output\_12\*-1.20656) + (demapping\_layer\_output\_13\*-0.24637) + (demapping\_layer\_output\_14\*-0.92009) + (demapping\_layer\_output\_15\*-1.08671) + (demapping\_layer\_output\_16\*1.01481) + (demapping\_layer\_output\_17\*-0.648537) + (demapping\_layer\_output\_18\*2.0996) + (demapping\_layer\_output\_19\*-1.6306) + (demapping\_layer\_output\_20\*-0.745122) + (demapping\_layer\_output\_21\*0.399791) + (demapping\_layer\_output\_22\*-0.786047) + (demapping\_layer\_output\_23\*0.288502) + (demapping\_layer\_output\_24\*0.0855117) );

output\_layer\_output\_80 = logistic( -0.745323 + (demapping\_layer\_output\_0\*1.07717) + (demapping\_layer\_output\_1\*0.711777) + (demapping\_layer\_output\_2\*-0.587384) + (demapping\_layer\_output\_3\*-1.31539) + (demapping\_layer\_output\_4\*-2.2315) + (demapping\_layer\_output\_5\*-0.683845) + (demapping\_layer\_output\_6\*-3.1136) + (demapping\_layer\_output\_7\*-3.7131) + (demapping\_layer\_output\_8\*0.159795) + (demapping\_layer\_output\_9\*-0.210093) + (demapping\_layer\_output\_10\*0.55233) + (demapping\_layer\_output\_11\*-2.07763) + (demapping\_layer\_output\_12\*-0.567301) + (demapping\_layer\_output\_13\*0.0981153) + (demapping\_layer\_output\_14\*-0.442522) + (demapping\_layer\_output\_15\*-0.569634) + (demapping\_layer\_output\_16\*1.09122) + (demapping\_layer\_output\_17\*-0.702508) + (demapping\_layer\_output\_18\*0.228404) + (demapping\_layer\_output\_19\*-0.976334) + (demapping\_layer\_output\_20\*-0.0316333) + (demapping\_layer\_output\_21\*0.759963) + (demapping\_layer\_output\_22\*-3.07869) + (demapping\_layer\_output\_23\*0.289868) + (demapping\_layer\_output\_24\*-0.161884) );

output\_layer\_output\_81 = logistic( -1.06952 + (demapping\_layer\_output\_0\*-1.35832) + (demapping\_layer\_output\_1\*0.045171) + (demapping\_layer\_output\_2\*0.166669) + (demapping\_layer\_output\_3\*-0.425893) + (demapping\_layer\_output\_4\*-0.365814) + (demapping\_layer\_output\_5\*0.199608) + (demapping\_layer\_output\_6\*0.250063) + (demapping\_layer\_output\_7\*-1.02095) + (demapping\_layer\_output\_8\*-0.35645) + (demapping\_layer\_output\_9\*0.449073) + (demapping\_layer\_output\_10\*-0.781348) + (demapping\_layer\_output\_11\*-1.11434) + (demapping\_layer\_output\_12\*-0.603602) + (demapping\_layer\_output\_13\*-1.29946) + (demapping\_layer\_output\_14\*-0.209756) + (demapping\_layer\_output\_15\*-0.37646) + (demapping\_layer\_output\_16\*0.932543) + (demapping\_layer\_output\_17\*-0.39717) + (demapping\_layer\_output\_18\*-1.8776e-05) + (demapping\_layer\_output\_19\*-1.51273) + (demapping\_layer\_output\_20\*-1.36062) + (demapping\_layer\_output\_21\*0.472034) + (demapping\_layer\_output\_22\*-0.965558) + (demapping\_layer\_output\_23\*1.03781) + (demapping\_layer\_output\_24\*1.38606) );

output\_layer\_output\_82 = logistic( -2.27657 + (demapping\_layer\_output\_0\*-3.78385) + (demapping\_layer\_output\_1\*-1.71119) + (demapping\_layer\_output\_2\*0.0209856) + (demapping\_layer\_output\_3\*3.35708) + (demapping\_layer\_output\_4\*-0.46182) + (demapping\_layer\_output\_5\*-1.54013) + (demapping\_layer\_output\_6\*-0.919358) + (demapping\_layer\_output\_7\*-1.31504) + (demapping\_layer\_output\_8\*-2.59863) + (demapping\_layer\_output\_9\*0.624707) + (demapping\_layer\_output\_10\*-1.61815) + (demapping\_layer\_output\_11\*-0.288353) + (demapping\_layer\_output\_12\*-0.999571) + (demapping\_layer\_output\_13\*3.29474) + (demapping\_layer\_output\_14\*-1.55015) + (demapping\_layer\_output\_15\*-7.30776) + (demapping\_layer\_output\_16\*2.30428) + (demapping\_layer\_output\_17\*-0.0402719) + (demapping\_layer\_output\_18\*2.30905) + (demapping\_layer\_output\_19\*-2.25835) + (demapping\_layer\_output\_20\*0.363451) + (demapping\_layer\_output\_21\*0.690668) + (demapping\_layer\_output\_22\*-1.9462) + (demapping\_layer\_output\_23\*1.28391) + (demapping\_layer\_output\_24\*-3.88603) );

output\_layer\_output\_83 = logistic( -0.679766 + (demapping\_layer\_output\_0\*-0.246946) + (demapping\_layer\_output\_1\*0.380518) + (demapping\_layer\_output\_2\*0.922296) + (demapping\_layer\_output\_3\*-0.953151) + (demapping\_layer\_output\_4\*0.039994) + (demapping\_layer\_output\_5\*0.258104) + (demapping\_layer\_output\_6\*1.7291) + (demapping\_layer\_output\_7\*0.410566) + (demapping\_layer\_output\_8\*-0.95926) + (demapping\_layer\_output\_9\*0.242814) + (demapping\_layer\_output\_10\*-0.410561) + (demapping\_layer\_output\_11\*-1.13999) + (demapping\_layer\_output\_12\*-2.91549) + (demapping\_layer\_output\_13\*-1.11703) + (demapping\_layer\_output\_14\*-0.497125) + (demapping\_layer\_output\_15\*-0.891322) + (demapping\_layer\_output\_16\*0.742026) + (demapping\_layer\_output\_17\*-1.18621) + (demapping\_layer\_output\_18\*1.90461) + (demapping\_layer\_output\_19\*-0.786566) + (demapping\_layer\_output\_20\*1.39866) + (demapping\_layer\_output\_21\*1.63785) + (demapping\_layer\_output\_22\*-3.02833) + (demapping\_layer\_output\_23\*0.505386) + (demapping\_layer\_output\_24\*-1.695) );

output\_layer\_output\_84 = logistic( -1.0619 + (demapping\_layer\_output\_0\*-2.32167) + (demapping\_layer\_output\_1\*0.350575) + (demapping\_layer\_output\_2\*0.298207) + (demapping\_layer\_output\_3\*-0.754475) + (demapping\_layer\_output\_4\*-0.182657) + (demapping\_layer\_output\_5\*-0.742663) + (demapping\_layer\_output\_6\*-3.06659) + (demapping\_layer\_output\_7\*-5.60668) + (demapping\_layer\_output\_8\*-1.15146) + (demapping\_layer\_output\_9\*-0.00674933) + (demapping\_layer\_output\_10\*-0.879096) + (demapping\_layer\_output\_11\*1.98703) + (demapping\_layer\_output\_12\*-3.01281) + (demapping\_layer\_output\_13\*1.30333) + (demapping\_layer\_output\_14\*-0.701142) + (demapping\_layer\_output\_15\*-2.39546) + (demapping\_layer\_output\_16\*0.779156) + (demapping\_layer\_output\_17\*2.68522) + (demapping\_layer\_output\_18\*-0.31514) + (demapping\_layer\_output\_19\*-1.04882) + (demapping\_layer\_output\_20\*-0.926947) + (demapping\_layer\_output\_21\*1.01449) + (demapping\_layer\_output\_22\*-0.836621) + (demapping\_layer\_output\_23\*0.780155) + (demapping\_layer\_output\_24\*-0.780208) );

output\_layer\_output\_85 = logistic( -0.368356 + (demapping\_layer\_output\_0\*-0.0565723) + (demapping\_layer\_output\_1\*-0.183899) + (demapping\_layer\_output\_2\*-0.407204) + (demapping\_layer\_output\_3\*1.53153) + (demapping\_layer\_output\_4\*-0.129081) + (demapping\_layer\_output\_5\*-0.00037015) + (demapping\_layer\_output\_6\*0.315336) + (demapping\_layer\_output\_7\*-1.25325) + (demapping\_layer\_output\_8\*0.545072) + (demapping\_layer\_output\_9\*-0.601869) + (demapping\_layer\_output\_10\*0.501997) + (demapping\_layer\_output\_11\*0.174724) + (demapping\_layer\_output\_12\*-1.73772) + (demapping\_layer\_output\_13\*-0.27462) + (demapping\_layer\_output\_14\*-1.84014) + (demapping\_layer\_output\_15\*-0.23417) + (demapping\_layer\_output\_16\*-0.590777) + (demapping\_layer\_output\_17\*0.230652) + (demapping\_layer\_output\_18\*-0.705705) + (demapping\_layer\_output\_19\*-0.389599) + (demapping\_layer\_output\_20\*-1.13742) + (demapping\_layer\_output\_21\*-1.03832) + (demapping\_layer\_output\_22\*-0.622166) + (demapping\_layer\_output\_23\*-1.3452) + (demapping\_layer\_output\_24\*-0.495571) );

output\_layer\_output\_86 = logistic( -1.4794 + (demapping\_layer\_output\_0\*-0.367072) + (demapping\_layer\_output\_1\*-0.220543) + (demapping\_layer\_output\_2\*1.19547) + (demapping\_layer\_output\_3\*0.210773) + (demapping\_layer\_output\_4\*-2.17822) + (demapping\_layer\_output\_5\*-0.927458) + (demapping\_layer\_output\_6\*-0.663077) + (demapping\_layer\_output\_7\*-0.752368) + (demapping\_layer\_output\_8\*-0.0165713) + (demapping\_layer\_output\_9\*0.417499) + (demapping\_layer\_output\_10\*-0.536468) + (demapping\_layer\_output\_11\*-0.0945397) + (demapping\_layer\_output\_12\*0.442791) + (demapping\_layer\_output\_13\*-0.292243) + (demapping\_layer\_output\_14\*-1.05886) + (demapping\_layer\_output\_15\*1.75978) + (demapping\_layer\_output\_16\*0.712921) + (demapping\_layer\_output\_17\*-0.625074) + (demapping\_layer\_output\_18\*0.0805249) + (demapping\_layer\_output\_19\*-1.91876) + (demapping\_layer\_output\_20\*-0.709377) + (demapping\_layer\_output\_21\*0.764937) + (demapping\_layer\_output\_22\*-1.57778) + (demapping\_layer\_output\_23\*-1.23301) + (demapping\_layer\_output\_24\*0.759235) );

output\_layer\_output\_87 = logistic( -1.79945 + (demapping\_layer\_output\_0\*-0.521533) + (demapping\_layer\_output\_1\*0.920101) + (demapping\_layer\_output\_2\*3.33516) + (demapping\_layer\_output\_3\*-1.25741) + (demapping\_layer\_output\_4\*-1.309) + (demapping\_layer\_output\_5\*0.30826) + (demapping\_layer\_output\_6\*-0.607102) + (demapping\_layer\_output\_7\*-1.58234) + (demapping\_layer\_output\_8\*-0.516361) + (demapping\_layer\_output\_9\*0.113654) + (demapping\_layer\_output\_10\*-0.352905) + (demapping\_layer\_output\_11\*0.373703) + (demapping\_layer\_output\_12\*0.713403) + (demapping\_layer\_output\_13\*-0.95451) + (demapping\_layer\_output\_14\*-0.41202) + (demapping\_layer\_output\_15\*0.957759) + (demapping\_layer\_output\_16\*0.365328) + (demapping\_layer\_output\_17\*-1.61863) + (demapping\_layer\_output\_18\*-1.66282) + (demapping\_layer\_output\_19\*-1.75426) + (demapping\_layer\_output\_20\*0.956187) + (demapping\_layer\_output\_21\*-2.35368) + (demapping\_layer\_output\_22\*-0.788985) + (demapping\_layer\_output\_23\*0.254513) + (demapping\_layer\_output\_24\*0.136906) );

output\_layer\_output\_88 = logistic( -0.29588 + (demapping\_layer\_output\_0\*0.333719) + (demapping\_layer\_output\_1\*1.34241) + (demapping\_layer\_output\_2\*0.820197) + (demapping\_layer\_output\_3\*1.14639) + (demapping\_layer\_output\_4\*0.509029) + (demapping\_layer\_output\_5\*0.987381) + (demapping\_layer\_output\_6\*-0.788225) + (demapping\_layer\_output\_7\*-0.21626) + (demapping\_layer\_output\_8\*0.0274364) + (demapping\_layer\_output\_9\*-0.143189) + (demapping\_layer\_output\_10\*0.312306) + (demapping\_layer\_output\_11\*-0.567499) + (demapping\_layer\_output\_12\*-0.693778) + (demapping\_layer\_output\_13\*-0.287099) + (demapping\_layer\_output\_14\*-0.585081) + (demapping\_layer\_output\_15\*0.138551) + (demapping\_layer\_output\_16\*0.799277) + (demapping\_layer\_output\_17\*-0.448148) + (demapping\_layer\_output\_18\*0.442994) + (demapping\_layer\_output\_19\*-0.392055) + (demapping\_layer\_output\_20\*-0.231181) + (demapping\_layer\_output\_21\*0.404983) + (demapping\_layer\_output\_22\*-0.759642) + (demapping\_layer\_output\_23\*0.23909) + (demapping\_layer\_output\_24\*0.111436) );

output\_layer\_output\_89 = logistic( -0.233924 + (demapping\_layer\_output\_0\*-0.533055) + (demapping\_layer\_output\_1\*-0.508757) + (demapping\_layer\_output\_2\*-0.309217) + (demapping\_layer\_output\_3\*0.268068) + (demapping\_layer\_output\_4\*0.523573) + (demapping\_layer\_output\_5\*0.495918) + (demapping\_layer\_output\_6\*-2.97499) + (demapping\_layer\_output\_7\*-2.26204) + (demapping\_layer\_output\_8\*-0.786757) + (demapping\_layer\_output\_9\*-1.46232) + (demapping\_layer\_output\_10\*-0.130093) + (demapping\_layer\_output\_11\*-0.812653) + (demapping\_layer\_output\_12\*-2.07673) + (demapping\_layer\_output\_13\*-1.82991) + (demapping\_layer\_output\_14\*-4.05273) + (demapping\_layer\_output\_15\*1.90514) + (demapping\_layer\_output\_16\*0.256132) + (demapping\_layer\_output\_17\*0.142154) + (demapping\_layer\_output\_18\*-0.14021) + (demapping\_layer\_output\_19\*-0.277625) + (demapping\_layer\_output\_20\*-1.20411) + (demapping\_layer\_output\_21\*2.67453) + (demapping\_layer\_output\_22\*-0.876939) + (demapping\_layer\_output\_23\*-0.179658) + (demapping\_layer\_output\_24\*0.608122) );

output\_layer\_output\_90 = logistic( -0.653516 + (demapping\_layer\_output\_0\*0.604278) + (demapping\_layer\_output\_1\*-0.543817) + (demapping\_layer\_output\_2\*0.885719) + (demapping\_layer\_output\_3\*-0.0241337) + (demapping\_layer\_output\_4\*0.262095) + (demapping\_layer\_output\_5\*0.86958) + (demapping\_layer\_output\_6\*0.492474) + (demapping\_layer\_output\_7\*-0.368042) + (demapping\_layer\_output\_8\*-0.84266) + (demapping\_layer\_output\_9\*0.534827) + (demapping\_layer\_output\_10\*-0.609831) + (demapping\_layer\_output\_11\*-0.317373) + (demapping\_layer\_output\_12\*-0.125214) + (demapping\_layer\_output\_13\*0.275228) + (demapping\_layer\_output\_14\*-0.880998) + (demapping\_layer\_output\_15\*0.220821) + (demapping\_layer\_output\_16\*-0.386918) + (demapping\_layer\_output\_17\*-0.297736) + (demapping\_layer\_output\_18\*-0.676681) + (demapping\_layer\_output\_19\*-0.73336) + (demapping\_layer\_output\_20\*-0.828086) + (demapping\_layer\_output\_21\*-0.139567) + (demapping\_layer\_output\_22\*-1.56763) + (demapping\_layer\_output\_23\*-0.340318) + (demapping\_layer\_output\_24\*0.329455) );

output\_layer\_output\_91 = logistic( -1.01267 + (demapping\_layer\_output\_0\*1.34924) + (demapping\_layer\_output\_1\*-0.345576) + (demapping\_layer\_output\_2\*-3.96073) + (demapping\_layer\_output\_3\*0.176604) + (demapping\_layer\_output\_4\*-2.08776) + (demapping\_layer\_output\_5\*-1.00248) + (demapping\_layer\_output\_6\*-0.64693) + (demapping\_layer\_output\_7\*-0.613166) + (demapping\_layer\_output\_8\*0.471149) + (demapping\_layer\_output\_9\*-2.35236) + (demapping\_layer\_output\_10\*-1.99467) + (demapping\_layer\_output\_11\*-0.0269891) + (demapping\_layer\_output\_12\*-1.03491) + (demapping\_layer\_output\_13\*0.286084) + (demapping\_layer\_output\_14\*-0.260889) + (demapping\_layer\_output\_15\*-0.257091) + (demapping\_layer\_output\_16\*1.04382) + (demapping\_layer\_output\_17\*0.57359) + (demapping\_layer\_output\_18\*-3.2654) + (demapping\_layer\_output\_19\*-1.09567) + (demapping\_layer\_output\_20\*-1.21202) + (demapping\_layer\_output\_21\*0.698639) + (demapping\_layer\_output\_22\*-3.91662) + (demapping\_layer\_output\_23\*-0.676881) + (demapping\_layer\_output\_24\*0.660885) );

output\_layer\_output\_92 = logistic( -2.3817 + (demapping\_layer\_output\_0\*1.14722) + (demapping\_layer\_output\_1\*-1.83241) + (demapping\_layer\_output\_2\*-0.103824) + (demapping\_layer\_output\_3\*-1.08125) + (demapping\_layer\_output\_4\*-4.50843) + (demapping\_layer\_output\_5\*-1.89235) + (demapping\_layer\_output\_6\*-0.846656) + (demapping\_layer\_output\_7\*-1.4319) + (demapping\_layer\_output\_8\*1.49178) + (demapping\_layer\_output\_9\*0.209257) + (demapping\_layer\_output\_10\*-2.61622) + (demapping\_layer\_output\_11\*-6.23764) + (demapping\_layer\_output\_12\*-2.46437) + (demapping\_layer\_output\_13\*0.837643) + (demapping\_layer\_output\_14\*-1.95498) + (demapping\_layer\_output\_15\*0.68972) + (demapping\_layer\_output\_16\*2.1166) + (demapping\_layer\_output\_17\*-0.569862) + (demapping\_layer\_output\_18\*0.656023) + (demapping\_layer\_output\_19\*-1.92785) + (demapping\_layer\_output\_20\*-1.2364) + (demapping\_layer\_output\_21\*-1.89496) + (demapping\_layer\_output\_22\*-0.327581) + (demapping\_layer\_output\_23\*-5.44894) + (demapping\_layer\_output\_24\*-4.79507) );

output\_layer\_output\_93 = logistic( 0.189552 + (demapping\_layer\_output\_0\*-0.94267) + (demapping\_layer\_output\_1\*-0.468173) + (demapping\_layer\_output\_2\*-1.79549) + (demapping\_layer\_output\_3\*0.978859) + (demapping\_layer\_output\_4\*0.235197) + (demapping\_layer\_output\_5\*-1.09973) + (demapping\_layer\_output\_6\*-0.428801) + (demapping\_layer\_output\_7\*-0.468094) + (demapping\_layer\_output\_8\*-0.897256) + (demapping\_layer\_output\_9\*-1.03177) + (demapping\_layer\_output\_10\*0.436054) + (demapping\_layer\_output\_11\*0.411591) + (demapping\_layer\_output\_12\*-2.3693) + (demapping\_layer\_output\_13\*0.168728) + (demapping\_layer\_output\_14\*-3.02083) + (demapping\_layer\_output\_15\*-1.19918) + (demapping\_layer\_output\_16\*-0.447897) + (demapping\_layer\_output\_17\*-0.793882) + (demapping\_layer\_output\_18\*-0.0170229) + (demapping\_layer\_output\_19\*-0.403293) + (demapping\_layer\_output\_20\*-0.616536) + (demapping\_layer\_output\_21\*0.0187782) + (demapping\_layer\_output\_22\*0.224624) + (demapping\_layer\_output\_23\*1.73591) + (demapping\_layer\_output\_24\*0.609252) );

output\_layer\_output\_94 = logistic( 0.0771519 + (demapping\_layer\_output\_0\*-0.251688) + (demapping\_layer\_output\_1\*-0.468196) + (demapping\_layer\_output\_2\*1.39548) + (demapping\_layer\_output\_3\*-0.447895) + (demapping\_layer\_output\_4\*0.180607) + (demapping\_layer\_output\_5\*-0.727064) + (demapping\_layer\_output\_6\*-0.620846) + (demapping\_layer\_output\_7\*-0.293564) + (demapping\_layer\_output\_8\*-0.124691) + (demapping\_layer\_output\_9\*0.539921) + (demapping\_layer\_output\_10\*-0.0757125) + (demapping\_layer\_output\_11\*-0.283496) + (demapping\_layer\_output\_12\*-0.0344978) + (demapping\_layer\_output\_13\*0.127998) + (demapping\_layer\_output\_14\*0.972729) + (demapping\_layer\_output\_15\*-0.213608) + (demapping\_layer\_output\_16\*0.506888) + (demapping\_layer\_output\_17\*0.0548103) + (demapping\_layer\_output\_18\*0.122621) + (demapping\_layer\_output\_19\*-0.063817) + (demapping\_layer\_output\_20\*-0.337573) + (demapping\_layer\_output\_21\*0.00690442) + (demapping\_layer\_output\_22\*-1.13087) + (demapping\_layer\_output\_23\*-0.136189) + (demapping\_layer\_output\_24\*-0.153398) );

output\_layer\_output\_95 = logistic( -1.22072 + (demapping\_layer\_output\_0\*0.131322) + (demapping\_layer\_output\_1\*-2.79962) + (demapping\_layer\_output\_2\*-2.03429) + (demapping\_layer\_output\_3\*-2.28943) + (demapping\_layer\_output\_4\*0.660358) + (demapping\_layer\_output\_5\*-0.609721) + (demapping\_layer\_output\_6\*0.531149) + (demapping\_layer\_output\_7\*-0.131374) + (demapping\_layer\_output\_8\*-0.248985) + (demapping\_layer\_output\_9\*-0.486875) + (demapping\_layer\_output\_10\*-1.38304) + (demapping\_layer\_output\_11\*1.88391) + (demapping\_layer\_output\_12\*-0.194294) + (demapping\_layer\_output\_13\*-0.429656) + (demapping\_layer\_output\_14\*-1.09712) + (demapping\_layer\_output\_15\*-1.629) + (demapping\_layer\_output\_16\*0.995404) + (demapping\_layer\_output\_17\*-1.15734) + (demapping\_layer\_output\_18\*0.291337) + (demapping\_layer\_output\_19\*-1.45722) + (demapping\_layer\_output\_20\*0.291344) + (demapping\_layer\_output\_21\*0.0326065) + (demapping\_layer\_output\_22\*-1.21131) + (demapping\_layer\_output\_23\*-5.37593) + (demapping\_layer\_output\_24\*-2.09722) );

output\_layer\_output\_96 = logistic( -1.56834 + (demapping\_layer\_output\_0\*0.661713) + (demapping\_layer\_output\_1\*-1.71592) + (demapping\_layer\_output\_2\*-2.257) + (demapping\_layer\_output\_3\*-0.919242) + (demapping\_layer\_output\_4\*-1.08483) + (demapping\_layer\_output\_5\*-1.59987) + (demapping\_layer\_output\_6\*-0.365962) + (demapping\_layer\_output\_7\*-1.41847) + (demapping\_layer\_output\_8\*-0.037809) + (demapping\_layer\_output\_9\*-1.47113) + (demapping\_layer\_output\_10\*-1.18818) + (demapping\_layer\_output\_11\*-0.424985) + (demapping\_layer\_output\_12\*-0.312084) + (demapping\_layer\_output\_13\*-0.201744) + (demapping\_layer\_output\_14\*0.753962) + (demapping\_layer\_output\_15\*3.61335) + (demapping\_layer\_output\_16\*0.981601) + (demapping\_layer\_output\_17\*-0.816504) + (demapping\_layer\_output\_18\*-1.64178) + (demapping\_layer\_output\_19\*-1.88605) + (demapping\_layer\_output\_20\*-1.20689) + (demapping\_layer\_output\_21\*0.95093) + (demapping\_layer\_output\_22\*-1.10957) + (demapping\_layer\_output\_23\*0.622398) + (demapping\_layer\_output\_24\*3.23052) );

output\_layer\_output\_97 = logistic( -0.571504 + (demapping\_layer\_output\_0\*1.81253) + (demapping\_layer\_output\_1\*2.33057) + (demapping\_layer\_output\_2\*5.21412) + (demapping\_layer\_output\_3\*0.436635) + (demapping\_layer\_output\_4\*-1.33291) + (demapping\_layer\_output\_5\*-2.91288) + (demapping\_layer\_output\_6\*-2.2745) + (demapping\_layer\_output\_7\*-0.607376) + (demapping\_layer\_output\_8\*0.227731) + (demapping\_layer\_output\_9\*0.406415) + (demapping\_layer\_output\_10\*-1.34206) + (demapping\_layer\_output\_11\*2.30839) + (demapping\_layer\_output\_12\*-4.13922) + (demapping\_layer\_output\_13\*-1.36881) + (demapping\_layer\_output\_14\*-1.79428) + (demapping\_layer\_output\_15\*0.421789) + (demapping\_layer\_output\_16\*-0.486743) + (demapping\_layer\_output\_17\*-0.704104) + (demapping\_layer\_output\_18\*-0.738122) + (demapping\_layer\_output\_19\*-0.421494) + (demapping\_layer\_output\_20\*-0.27016) + (demapping\_layer\_output\_21\*1.12189) + (demapping\_layer\_output\_22\*-0.863526) + (demapping\_layer\_output\_23\*4.18498) + (demapping\_layer\_output\_24\*-1.0738) );

output\_layer\_output\_98 = logistic( -0.0292013 + (demapping\_layer\_output\_0\*-0.336935) + (demapping\_layer\_output\_1\*0.374743) + (demapping\_layer\_output\_2\*0.808319) + (demapping\_layer\_output\_3\*-0.0442415) + (demapping\_layer\_output\_4\*-0.0889522) + (demapping\_layer\_output\_5\*-0.0484006) + (demapping\_layer\_output\_6\*-0.204474) + (demapping\_layer\_output\_7\*0.266876) + (demapping\_layer\_output\_8\*-0.561296) + (demapping\_layer\_output\_9\*-0.274368) + (demapping\_layer\_output\_10\*-0.300206) + (demapping\_layer\_output\_11\*-0.351572) + (demapping\_layer\_output\_12\*-0.915222) + (demapping\_layer\_output\_13\*-0.232055) + (demapping\_layer\_output\_14\*-0.780469) + (demapping\_layer\_output\_15\*0.16598) + (demapping\_layer\_output\_16\*0.220685) + (demapping\_layer\_output\_17\*-0.0609522) + (demapping\_layer\_output\_18\*0.595235) + (demapping\_layer\_output\_19\*-0.352104) + (demapping\_layer\_output\_20\*0.0342675) + (demapping\_layer\_output\_21\*0.154736) + (demapping\_layer\_output\_22\*-0.844824) + (demapping\_layer\_output\_23\*-0.13171) + (demapping\_layer\_output\_24\*-0.0353476) );

output\_layer\_output\_99 = logistic( 0.229605 + (demapping\_layer\_output\_0\*0.229231) + (demapping\_layer\_output\_1\*-0.246196) + (demapping\_layer\_output\_2\*-0.150166) + (demapping\_layer\_output\_3\*0.226548) + (demapping\_layer\_output\_4\*0.210754) + (demapping\_layer\_output\_5\*-0.239425) + (demapping\_layer\_output\_6\*-0.290525) + (demapping\_layer\_output\_7\*-0.161076) + (demapping\_layer\_output\_8\*-0.693069) + (demapping\_layer\_output\_9\*-0.00814472) + (demapping\_layer\_output\_10\*-1.22904) + (demapping\_layer\_output\_11\*0.454749) + (demapping\_layer\_output\_12\*-1.0367) + (demapping\_layer\_output\_13\*0.0939417) + (demapping\_layer\_output\_14\*-1.15894) + (demapping\_layer\_output\_15\*-0.0206473) + (demapping\_layer\_output\_16\*0.31916) + (demapping\_layer\_output\_17\*-0.238311) + (demapping\_layer\_output\_18\*0.100682) + (demapping\_layer\_output\_19\*0.147682) + (demapping\_layer\_output\_20\*-0.065681) + (demapping\_layer\_output\_21\*0.20585) + (demapping\_layer\_output\_22\*0.190486) + (demapping\_layer\_output\_23\*0.213889) + (demapping\_layer\_output\_24\*-0.0581755) );

output\_layer\_output\_100 = logistic( -0.945617 + (demapping\_layer\_output\_0\*-2.31351) + (demapping\_layer\_output\_1\*3.551) + (demapping\_layer\_output\_2\*2.97097) + (demapping\_layer\_output\_3\*-1.85769) + (demapping\_layer\_output\_4\*0.219746) + (demapping\_layer\_output\_5\*-3.30756) + (demapping\_layer\_output\_6\*-7.39936) + (demapping\_layer\_output\_7\*-1.19967) + (demapping\_layer\_output\_8\*0.344471) + (demapping\_layer\_output\_9\*0.0335725) + (demapping\_layer\_output\_10\*-1.03641) + (demapping\_layer\_output\_11\*-0.0207539) + (demapping\_layer\_output\_12\*-3.34691) + (demapping\_layer\_output\_13\*0.36832) + (demapping\_layer\_output\_14\*1.03654) + (demapping\_layer\_output\_15\*0.311049) + (demapping\_layer\_output\_16\*1.96372) + (demapping\_layer\_output\_17\*-2.04168) + (demapping\_layer\_output\_18\*2.1008) + (demapping\_layer\_output\_19\*-1.21805) + (demapping\_layer\_output\_20\*-2.02764) + (demapping\_layer\_output\_21\*4.0117) + (demapping\_layer\_output\_22\*-0.610829) + (demapping\_layer\_output\_23\*-1.1605) + (demapping\_layer\_output\_24\*-0.00251348) );

output\_layer\_output\_101 = logistic( -1.15696 + (demapping\_layer\_output\_0\*2.98234) + (demapping\_layer\_output\_1\*0.676985) + (demapping\_layer\_output\_2\*0.334294) + (demapping\_layer\_output\_3\*-0.924776) + (demapping\_layer\_output\_4\*0.623595) + (demapping\_layer\_output\_5\*-1.22122) + (demapping\_layer\_output\_6\*-0.35503) + (demapping\_layer\_output\_7\*-3.93254) + (demapping\_layer\_output\_8\*0.351148) + (demapping\_layer\_output\_9\*0.121926) + (demapping\_layer\_output\_10\*-1.156) + (demapping\_layer\_output\_11\*-0.0475367) + (demapping\_layer\_output\_12\*-3.60656) + (demapping\_layer\_output\_13\*-0.0855189) + (demapping\_layer\_output\_14\*-1.00596) + (demapping\_layer\_output\_15\*-0.591001) + (demapping\_layer\_output\_16\*1.0076) + (demapping\_layer\_output\_17\*-2.37838) + (demapping\_layer\_output\_18\*2.84621) + (demapping\_layer\_output\_19\*-1.43331) + (demapping\_layer\_output\_20\*-1.17023) + (demapping\_layer\_output\_21\*-0.11393) + (demapping\_layer\_output\_22\*-1.14936) + (demapping\_layer\_output\_23\*0.751771) + (demapping\_layer\_output\_24\*-0.549436) );

output\_layer\_output\_102 = logistic( 0.0345169 + (demapping\_layer\_output\_0\*4.27764) + (demapping\_layer\_output\_1\*0.130254) + (demapping\_layer\_output\_2\*0.755855) + (demapping\_layer\_output\_3\*1.11982) + (demapping\_layer\_output\_4\*2.20093) + (demapping\_layer\_output\_5\*-0.447722) + (demapping\_layer\_output\_6\*-1.22352) + (demapping\_layer\_output\_7\*-1.03519) + (demapping\_layer\_output\_8\*-2.85753) + (demapping\_layer\_output\_9\*-3.58681) + (demapping\_layer\_output\_10\*1.0627) + (demapping\_layer\_output\_11\*-1.02346) + (demapping\_layer\_output\_12\*-2.78361) + (demapping\_layer\_output\_13\*-12.3635) + (demapping\_layer\_output\_14\*0.42821) + (demapping\_layer\_output\_15\*1.37412) + (demapping\_layer\_output\_16\*1.33547) + (demapping\_layer\_output\_17\*1.71197) + (demapping\_layer\_output\_18\*0.056433) + (demapping\_layer\_output\_19\*0.0723591) + (demapping\_layer\_output\_20\*-1.25382) + (demapping\_layer\_output\_21\*-0.6372) + (demapping\_layer\_output\_22\*-0.023978) + (demapping\_layer\_output\_23\*1.20039) + (demapping\_layer\_output\_24\*2.73893) );

output\_layer\_output\_103 = logistic( -1.68627 + (demapping\_layer\_output\_0\*-0.972851) + (demapping\_layer\_output\_1\*0.355655) + (demapping\_layer\_output\_2\*0.770313) + (demapping\_layer\_output\_3\*0.178802) + (demapping\_layer\_output\_4\*0.747596) + (demapping\_layer\_output\_5\*-1.33267) + (demapping\_layer\_output\_6\*-0.7794) + (demapping\_layer\_output\_7\*-0.749891) + (demapping\_layer\_output\_8\*-0.682351) + (demapping\_layer\_output\_9\*0.0926828) + (demapping\_layer\_output\_10\*-0.282548) + (demapping\_layer\_output\_11\*-0.680664) + (demapping\_layer\_output\_12\*0.880968) + (demapping\_layer\_output\_13\*1.3131) + (demapping\_layer\_output\_14\*0.525747) + (demapping\_layer\_output\_15\*-0.0651986) + (demapping\_layer\_output\_16\*-0.232663) + (demapping\_layer\_output\_17\*-0.0171282) + (demapping\_layer\_output\_18\*-0.125721) + (demapping\_layer\_output\_19\*-1.84272) + (demapping\_layer\_output\_20\*0.696656) + (demapping\_layer\_output\_21\*-0.137619) + (demapping\_layer\_output\_22\*-1.28746) + (demapping\_layer\_output\_23\*-0.129055) + (demapping\_layer\_output\_24\*0.349652) );

output\_layer\_output\_104 = logistic( -0.769792 + (demapping\_layer\_output\_0\*-1.42279) + (demapping\_layer\_output\_1\*0.743039) + (demapping\_layer\_output\_2\*1.48701) + (demapping\_layer\_output\_3\*-0.0592687) + (demapping\_layer\_output\_4\*-0.726186) + (demapping\_layer\_output\_5\*0.477935) + (demapping\_layer\_output\_6\*-2.26259) + (demapping\_layer\_output\_7\*-0.51614) + (demapping\_layer\_output\_8\*-1.72398) + (demapping\_layer\_output\_9\*-0.488208) + (demapping\_layer\_output\_10\*1.24545) + (demapping\_layer\_output\_11\*0.263253) + (demapping\_layer\_output\_12\*0.253528) + (demapping\_layer\_output\_13\*1.00267) + (demapping\_layer\_output\_14\*0.00386338) + (demapping\_layer\_output\_15\*0.535946) + (demapping\_layer\_output\_16\*-0.26701) + (demapping\_layer\_output\_17\*0.216321) + (demapping\_layer\_output\_18\*-0.467007) + (demapping\_layer\_output\_19\*-1.07674) + (demapping\_layer\_output\_20\*-0.369129) + (demapping\_layer\_output\_21\*1.12853) + (demapping\_layer\_output\_22\*-1.75243) + (demapping\_layer\_output\_23\*0.977429) + (demapping\_layer\_output\_24\*0.705247) );

output\_layer\_output\_105 = logistic( -0.573462 + (demapping\_layer\_output\_0\*-1.43462) + (demapping\_layer\_output\_1\*-0.362672) + (demapping\_layer\_output\_2\*4.13215) + (demapping\_layer\_output\_3\*-0.354135) + (demapping\_layer\_output\_4\*-2.81088) + (demapping\_layer\_output\_5\*-0.779563) + (demapping\_layer\_output\_6\*-2.00899) + (demapping\_layer\_output\_7\*-0.41733) + (demapping\_layer\_output\_8\*2.8433) + (demapping\_layer\_output\_9\*1.1476) + (demapping\_layer\_output\_10\*-0.422065) + (demapping\_layer\_output\_11\*-3.37029) + (demapping\_layer\_output\_12\*-1.21634) + (demapping\_layer\_output\_13\*-1.42656) + (demapping\_layer\_output\_14\*0.363283) + (demapping\_layer\_output\_15\*2.5154) + (demapping\_layer\_output\_16\*-0.0267917) + (demapping\_layer\_output\_17\*3.38121) + (demapping\_layer\_output\_18\*1.11409) + (demapping\_layer\_output\_19\*-0.962358) + (demapping\_layer\_output\_20\*-2.87363) + (demapping\_layer\_output\_21\*1.71849) + (demapping\_layer\_output\_22\*0.0414363) + (demapping\_layer\_output\_23\*-3.70509) + (demapping\_layer\_output\_24\*1.95933) );

output\_layer\_output\_106 = logistic( -0.724782 + (demapping\_layer\_output\_0\*0.096803) + (demapping\_layer\_output\_1\*0.174797) + (demapping\_layer\_output\_2\*-0.170266) + (demapping\_layer\_output\_3\*0.870215) + (demapping\_layer\_output\_4\*0.299069) + (demapping\_layer\_output\_5\*0.59747) + (demapping\_layer\_output\_6\*1.09651) + (demapping\_layer\_output\_7\*-0.0955947) + (demapping\_layer\_output\_8\*-0.608306) + (demapping\_layer\_output\_9\*-1.0105) + (demapping\_layer\_output\_10\*-0.499612) + (demapping\_layer\_output\_11\*-0.392742) + (demapping\_layer\_output\_12\*0.671221) + (demapping\_layer\_output\_13\*0.148847) + (demapping\_layer\_output\_14\*-2.41544) + (demapping\_layer\_output\_15\*0.799859) + (demapping\_layer\_output\_16\*0.828885) + (demapping\_layer\_output\_17\*-0.357052) + (demapping\_layer\_output\_18\*-0.576524) + (demapping\_layer\_output\_19\*-1.52275) + (demapping\_layer\_output\_20\*0.94057) + (demapping\_layer\_output\_21\*-0.143052) + (demapping\_layer\_output\_22\*-2.23112) + (demapping\_layer\_output\_23\*-0.213609) + (demapping\_layer\_output\_24\*-0.444164) );

output\_layer\_output\_107 = logistic( -2.99327 + (demapping\_layer\_output\_0\*5.80273) + (demapping\_layer\_output\_1\*1.26441) + (demapping\_layer\_output\_2\*1.60313) + (demapping\_layer\_output\_3\*1.24635) + (demapping\_layer\_output\_4\*-1.51789) + (demapping\_layer\_output\_5\*-1.87568) + (demapping\_layer\_output\_6\*-0.910974) + (demapping\_layer\_output\_7\*-1.91405) + (demapping\_layer\_output\_8\*5.05344) + (demapping\_layer\_output\_9\*-1.37849) + (demapping\_layer\_output\_10\*-2.01541) + (demapping\_layer\_output\_11\*-1.13684) + (demapping\_layer\_output\_12\*-2.30088) + (demapping\_layer\_output\_13\*0.505009) + (demapping\_layer\_output\_14\*-2.09817) + (demapping\_layer\_output\_15\*-0.654707) + (demapping\_layer\_output\_16\*3.01887) + (demapping\_layer\_output\_17\*3.14955) + (demapping\_layer\_output\_18\*4.37908) + (demapping\_layer\_output\_19\*-2.77904) + (demapping\_layer\_output\_20\*0.534198) + (demapping\_layer\_output\_21\*0.382697) + (demapping\_layer\_output\_22\*-1.58318) + (demapping\_layer\_output\_23\*2.46214) + (demapping\_layer\_output\_24\*-4.79717) );

output\_layer\_output\_108 = logistic( -0.161534 + (demapping\_layer\_output\_0\*-0.217478) + (demapping\_layer\_output\_1\*-0.459467) + (demapping\_layer\_output\_2\*-0.292525) + (demapping\_layer\_output\_3\*-0.600026) + (demapping\_layer\_output\_4\*0.304008) + (demapping\_layer\_output\_5\*-0.389599) + (demapping\_layer\_output\_6\*-0.753833) + (demapping\_layer\_output\_7\*-0.950996) + (demapping\_layer\_output\_8\*-0.271053) + (demapping\_layer\_output\_9\*-0.973773) + (demapping\_layer\_output\_10\*-0.370253) + (demapping\_layer\_output\_11\*0.100091) + (demapping\_layer\_output\_12\*-0.864746) + (demapping\_layer\_output\_13\*0.787842) + (demapping\_layer\_output\_14\*-0.740024) + (demapping\_layer\_output\_15\*0.466701) + (demapping\_layer\_output\_16\*0.72422) + (demapping\_layer\_output\_17\*-0.567157) + (demapping\_layer\_output\_18\*-0.0205097) + (demapping\_layer\_output\_19\*-0.0991501) + (demapping\_layer\_output\_20\*-1.16959) + (demapping\_layer\_output\_21\*-0.0546243) + (demapping\_layer\_output\_22\*0.9993) + (demapping\_layer\_output\_23\*0.439436) + (demapping\_layer\_output\_24\*0.587649) );

output\_layer\_output\_109 = logistic( -0.215333 + (demapping\_layer\_output\_0\*-0.397972) + (demapping\_layer\_output\_1\*0.182018) + (demapping\_layer\_output\_2\*1.91151) + (demapping\_layer\_output\_3\*0.74577) + (demapping\_layer\_output\_4\*1.90915) + (demapping\_layer\_output\_5\*0.0648506) + (demapping\_layer\_output\_6\*-0.814418) + (demapping\_layer\_output\_7\*-0.372402) + (demapping\_layer\_output\_8\*0.653478) + (demapping\_layer\_output\_9\*0.363219) + (demapping\_layer\_output\_10\*-0.972933) + (demapping\_layer\_output\_11\*-0.360111) + (demapping\_layer\_output\_12\*-0.209778) + (demapping\_layer\_output\_13\*0.263378) + (demapping\_layer\_output\_14\*-0.62345) + (demapping\_layer\_output\_15\*0.23171) + (demapping\_layer\_output\_16\*0.570958) + (demapping\_layer\_output\_17\*2.54401) + (demapping\_layer\_output\_18\*-1.18246) + (demapping\_layer\_output\_19\*-0.360769) + (demapping\_layer\_output\_20\*0.55076) + (demapping\_layer\_output\_21\*-0.20164) + (demapping\_layer\_output\_22\*-0.541393) + (demapping\_layer\_output\_23\*1.27098) + (demapping\_layer\_output\_24\*0.445816) );

output\_layer\_output\_110 = logistic( -0.769012 + (demapping\_layer\_output\_0\*-0.635055) + (demapping\_layer\_output\_1\*-1.25811) + (demapping\_layer\_output\_2\*-0.471606) + (demapping\_layer\_output\_3\*0.602176) + (demapping\_layer\_output\_4\*0.653962) + (demapping\_layer\_output\_5\*0.486112) + (demapping\_layer\_output\_6\*0.161976) + (demapping\_layer\_output\_7\*-0.589925) + (demapping\_layer\_output\_8\*-0.811468) + (demapping\_layer\_output\_9\*-0.587025) + (demapping\_layer\_output\_10\*-3.36988) + (demapping\_layer\_output\_11\*0.0678334) + (demapping\_layer\_output\_12\*0.867178) + (demapping\_layer\_output\_13\*0.36697) + (demapping\_layer\_output\_14\*1.48701) + (demapping\_layer\_output\_15\*-0.29245) + (demapping\_layer\_output\_16\*3.35884) + (demapping\_layer\_output\_17\*-0.677799) + (demapping\_layer\_output\_18\*0.992144) + (demapping\_layer\_output\_19\*-2.0206) + (demapping\_layer\_output\_20\*-1.38342) + (demapping\_layer\_output\_21\*0.317554) + (demapping\_layer\_output\_22\*0.171054) + (demapping\_layer\_output\_23\*0.516508) + (demapping\_layer\_output\_24\*0.023267) );

output\_layer\_output\_111 = logistic( -1.26514 + (demapping\_layer\_output\_0\*-0.997204) + (demapping\_layer\_output\_1\*0.381611) + (demapping\_layer\_output\_2\*0.693811) + (demapping\_layer\_output\_3\*0.436793) + (demapping\_layer\_output\_4\*1.25728) + (demapping\_layer\_output\_5\*-0.515098) + (demapping\_layer\_output\_6\*-0.173091) + (demapping\_layer\_output\_7\*-0.765206) + (demapping\_layer\_output\_8\*-0.180134) + (demapping\_layer\_output\_9\*0.00685478) + (demapping\_layer\_output\_10\*1.80468) + (demapping\_layer\_output\_11\*0.297601) + (demapping\_layer\_output\_12\*1.14032) + (demapping\_layer\_output\_13\*-0.213196) + (demapping\_layer\_output\_14\*-0.723641) + (demapping\_layer\_output\_15\*-0.626567) + (demapping\_layer\_output\_16\*1.31768) + (demapping\_layer\_output\_17\*0.618944) + (demapping\_layer\_output\_18\*-0.0598505) + (demapping\_layer\_output\_19\*-1.06644) + (demapping\_layer\_output\_20\*0.282814) + (demapping\_layer\_output\_21\*0.951542) + (demapping\_layer\_output\_22\*0.0363675) + (demapping\_layer\_output\_23\*1.8677) + (demapping\_layer\_output\_24\*0.102981) );

output\_layer\_output\_112 = logistic( -1.20433 + (demapping\_layer\_output\_0\*-0.30324) + (demapping\_layer\_output\_1\*0.839881) + (demapping\_layer\_output\_2\*-0.275298) + (demapping\_layer\_output\_3\*0.786368) + (demapping\_layer\_output\_4\*0.723413) + (demapping\_layer\_output\_5\*-0.398998) + (demapping\_layer\_output\_6\*-0.297691) + (demapping\_layer\_output\_7\*-0.605863) + (demapping\_layer\_output\_8\*-0.167193) + (demapping\_layer\_output\_9\*-0.232781) + (demapping\_layer\_output\_10\*-0.952387) + (demapping\_layer\_output\_11\*-0.661356) + (demapping\_layer\_output\_12\*-0.613022) + (demapping\_layer\_output\_13\*0.347844) + (demapping\_layer\_output\_14\*0.489742) + (demapping\_layer\_output\_15\*-0.281098) + (demapping\_layer\_output\_16\*-0.152363) + (demapping\_layer\_output\_17\*-0.341967) + (demapping\_layer\_output\_18\*-0.151135) + (demapping\_layer\_output\_19\*-1.22797) + (demapping\_layer\_output\_20\*-0.736808) + (demapping\_layer\_output\_21\*-0.300174) + (demapping\_layer\_output\_22\*0.200957) + (demapping\_layer\_output\_23\*0.308388) + (demapping\_layer\_output\_24\*0.639908) );

output\_layer\_output\_113 = logistic( -1.86673 + (demapping\_layer\_output\_0\*2.68916) + (demapping\_layer\_output\_1\*-0.508465) + (demapping\_layer\_output\_2\*-0.207951) + (demapping\_layer\_output\_3\*-0.950419) + (demapping\_layer\_output\_4\*1.8809) + (demapping\_layer\_output\_5\*-2.96391) + (demapping\_layer\_output\_6\*-0.691275) + (demapping\_layer\_output\_7\*-1.99339) + (demapping\_layer\_output\_8\*0.468701) + (demapping\_layer\_output\_9\*-1.31995) + (demapping\_layer\_output\_10\*-2.19714) + (demapping\_layer\_output\_11\*0.530172) + (demapping\_layer\_output\_12\*0.399644) + (demapping\_layer\_output\_13\*0.459582) + (demapping\_layer\_output\_14\*0.288871) + (demapping\_layer\_output\_15\*1.31835) + (demapping\_layer\_output\_16\*-0.705901) + (demapping\_layer\_output\_17\*-0.454251) + (demapping\_layer\_output\_18\*-0.59335) + (demapping\_layer\_output\_19\*-1.73332) + (demapping\_layer\_output\_20\*1.96457) + (demapping\_layer\_output\_21\*0.434576) + (demapping\_layer\_output\_22\*-0.623902) + (demapping\_layer\_output\_23\*1.62224) + (demapping\_layer\_output\_24\*0.166631) );

output\_layer\_output\_114 = logistic( -0.768092 + (demapping\_layer\_output\_0\*1.20071) + (demapping\_layer\_output\_1\*-3.05835) + (demapping\_layer\_output\_2\*0.407355) + (demapping\_layer\_output\_3\*0.393274) + (demapping\_layer\_output\_4\*0.368628) + (demapping\_layer\_output\_5\*-1.70198) + (demapping\_layer\_output\_6\*-1.09812) + (demapping\_layer\_output\_7\*-1.30415) + (demapping\_layer\_output\_8\*-0.392026) + (demapping\_layer\_output\_9\*0.341195) + (demapping\_layer\_output\_10\*-0.26671) + (demapping\_layer\_output\_11\*-1.01353) + (demapping\_layer\_output\_12\*-1.03159) + (demapping\_layer\_output\_13\*-0.508214) + (demapping\_layer\_output\_14\*-4.51039) + (demapping\_layer\_output\_15\*-0.406965) + (demapping\_layer\_output\_16\*0.998704) + (demapping\_layer\_output\_17\*-0.299502) + (demapping\_layer\_output\_18\*-0.462463) + (demapping\_layer\_output\_19\*-1.33467) + (demapping\_layer\_output\_20\*-0.534739) + (demapping\_layer\_output\_21\*0.614924) + (demapping\_layer\_output\_22\*-3.8886) + (demapping\_layer\_output\_23\*0.071259) + (demapping\_layer\_output\_24\*-1.05616) );

output\_layer\_output\_115 = logistic( -0.58386 + (demapping\_layer\_output\_0\*-0.327872) + (demapping\_layer\_output\_1\*-0.905685) + (demapping\_layer\_output\_2\*1.37145) + (demapping\_layer\_output\_3\*0.00397748) + (demapping\_layer\_output\_4\*0.525574) + (demapping\_layer\_output\_5\*-0.168567) + (demapping\_layer\_output\_6\*-0.177052) + (demapping\_layer\_output\_7\*-1.2711) + (demapping\_layer\_output\_8\*-0.618967) + (demapping\_layer\_output\_9\*0.632171) + (demapping\_layer\_output\_10\*-0.459846) + (demapping\_layer\_output\_11\*-1.1761) + (demapping\_layer\_output\_12\*-0.575918) + (demapping\_layer\_output\_13\*0.16543) + (demapping\_layer\_output\_14\*-0.350072) + (demapping\_layer\_output\_15\*0.359532) + (demapping\_layer\_output\_16\*0.478267) + (demapping\_layer\_output\_17\*-0.41925) + (demapping\_layer\_output\_18\*-0.477229) + (demapping\_layer\_output\_19\*-0.692824) + (demapping\_layer\_output\_20\*0.109135) + (demapping\_layer\_output\_21\*-0.395347) + (demapping\_layer\_output\_22\*-0.45563) + (demapping\_layer\_output\_23\*0.215342) + (demapping\_layer\_output\_24\*0.534681) );

output\_layer\_output\_116 = logistic( -0.901718 + (demapping\_layer\_output\_0\*-0.989964) + (demapping\_layer\_output\_1\*-0.510678) + (demapping\_layer\_output\_2\*0.788858) + (demapping\_layer\_output\_3\*0.263192) + (demapping\_layer\_output\_4\*-4.20283) + (demapping\_layer\_output\_5\*-0.925357) + (demapping\_layer\_output\_6\*0.0544151) + (demapping\_layer\_output\_7\*0.236687) + (demapping\_layer\_output\_8\*-0.940691) + (demapping\_layer\_output\_9\*-0.746693) + (demapping\_layer\_output\_10\*-0.645657) + (demapping\_layer\_output\_11\*-2.17555) + (demapping\_layer\_output\_12\*-4.65987) + (demapping\_layer\_output\_13\*-0.446549) + (demapping\_layer\_output\_14\*-0.908841) + (demapping\_layer\_output\_15\*-0.596191) + (demapping\_layer\_output\_16\*0.891037) + (demapping\_layer\_output\_17\*0.372261) + (demapping\_layer\_output\_18\*-0.0414228) + (demapping\_layer\_output\_19\*-1.4332) + (demapping\_layer\_output\_20\*0.31918) + (demapping\_layer\_output\_21\*-0.0297618) + (demapping\_layer\_output\_22\*-0.735352) + (demapping\_layer\_output\_23\*0.543127) + (demapping\_layer\_output\_24\*-0.779105) );

output\_layer\_output\_117 = logistic( -1.75782 + (demapping\_layer\_output\_0\*3.15974) + (demapping\_layer\_output\_1\*0.660259) + (demapping\_layer\_output\_2\*0.0349592) + (demapping\_layer\_output\_3\*0.0952722) + (demapping\_layer\_output\_4\*0.224761) + (demapping\_layer\_output\_5\*-1.79426) + (demapping\_layer\_output\_6\*-0.083219) + (demapping\_layer\_output\_7\*-0.912428) + (demapping\_layer\_output\_8\*-0.448304) + (demapping\_layer\_output\_9\*-0.12186) + (demapping\_layer\_output\_10\*-1.20817) + (demapping\_layer\_output\_11\*-0.150807) + (demapping\_layer\_output\_12\*-0.617074) + (demapping\_layer\_output\_13\*0.191909) + (demapping\_layer\_output\_14\*0.676441) + (demapping\_layer\_output\_15\*-0.254764) + (demapping\_layer\_output\_16\*1.4919) + (demapping\_layer\_output\_17\*0.179387) + (demapping\_layer\_output\_18\*-0.398377) + (demapping\_layer\_output\_19\*-1.94669) + (demapping\_layer\_output\_20\*0.497799) + (demapping\_layer\_output\_21\*-0.350439) + (demapping\_layer\_output\_22\*-0.74715) + (demapping\_layer\_output\_23\*-2.59491) + (demapping\_layer\_output\_24\*-2.3294) );

output\_layer\_output\_118 = logistic( -0.993455 + (demapping\_layer\_output\_0\*0.167673) + (demapping\_layer\_output\_1\*0.505573) + (demapping\_layer\_output\_2\*-0.0775437) + (demapping\_layer\_output\_3\*-1.17351) + (demapping\_layer\_output\_4\*2.17282) + (demapping\_layer\_output\_5\*-0.929418) + (demapping\_layer\_output\_6\*-0.910058) + (demapping\_layer\_output\_7\*-1.19949) + (demapping\_layer\_output\_8\*-0.306905) + (demapping\_layer\_output\_9\*-0.043681) + (demapping\_layer\_output\_10\*-2.76322) + (demapping\_layer\_output\_11\*0.0833319) + (demapping\_layer\_output\_12\*-0.544184) + (demapping\_layer\_output\_13\*-0.855935) + (demapping\_layer\_output\_14\*-0.661924) + (demapping\_layer\_output\_15\*0.112761) + (demapping\_layer\_output\_16\*7.19295) + (demapping\_layer\_output\_17\*-0.515208) + (demapping\_layer\_output\_18\*-0.72322) + (demapping\_layer\_output\_19\*-3.84204) + (demapping\_layer\_output\_20\*0.488122) + (demapping\_layer\_output\_21\*0.950845) + (demapping\_layer\_output\_22\*-0.749827) + (demapping\_layer\_output\_23\*3.1083) + (demapping\_layer\_output\_24\*-0.476705) );

output\_layer\_output\_119 = logistic( -1.43242 + (demapping\_layer\_output\_0\*-1.66885) + (demapping\_layer\_output\_1\*-2.07938) + (demapping\_layer\_output\_2\*0.932612) + (demapping\_layer\_output\_3\*1.39628) + (demapping\_layer\_output\_4\*-0.629612) + (demapping\_layer\_output\_5\*-1.07134) + (demapping\_layer\_output\_6\*-0.659375) + (demapping\_layer\_output\_7\*-1.29338) + (demapping\_layer\_output\_8\*-1.91164) + (demapping\_layer\_output\_9\*0.81397) + (demapping\_layer\_output\_10\*-1.27458) + (demapping\_layer\_output\_11\*0.100799) + (demapping\_layer\_output\_12\*-0.437549) + (demapping\_layer\_output\_13\*-1.22765) + (demapping\_layer\_output\_14\*-1.43176) + (demapping\_layer\_output\_15\*-6.33448) + (demapping\_layer\_output\_16\*1.46086) + (demapping\_layer\_output\_17\*-3.1033) + (demapping\_layer\_output\_18\*1.12553) + (demapping\_layer\_output\_19\*-1.47749) + (demapping\_layer\_output\_20\*1.97463) + (demapping\_layer\_output\_21\*-0.989172) + (demapping\_layer\_output\_22\*-1.37212) + (demapping\_layer\_output\_23\*0.896675) + (demapping\_layer\_output\_24\*-2.74474) );

output\_layer\_output\_120 = logistic( -1.47638 + (demapping\_layer\_output\_0\*-1.16337) + (demapping\_layer\_output\_1\*-1.78393) + (demapping\_layer\_output\_2\*1.82977) + (demapping\_layer\_output\_3\*-0.98517) + (demapping\_layer\_output\_4\*-0.343318) + (demapping\_layer\_output\_5\*1.47135) + (demapping\_layer\_output\_6\*-0.0414989) + (demapping\_layer\_output\_7\*-1.56161) + (demapping\_layer\_output\_8\*-0.156874) + (demapping\_layer\_output\_9\*-0.950773) + (demapping\_layer\_output\_10\*-0.445354) + (demapping\_layer\_output\_11\*-0.153475) + (demapping\_layer\_output\_12\*-3.17547) + (demapping\_layer\_output\_13\*-0.826073) + (demapping\_layer\_output\_14\*-0.84152) + (demapping\_layer\_output\_15\*0.974498) + (demapping\_layer\_output\_16\*-0.29502) + (demapping\_layer\_output\_17\*1.57824) + (demapping\_layer\_output\_18\*-0.194381) + (demapping\_layer\_output\_19\*-1.58755) + (demapping\_layer\_output\_20\*-0.755289) + (demapping\_layer\_output\_21\*-1.77194) + (demapping\_layer\_output\_22\*-0.469892) + (demapping\_layer\_output\_23\*0.673298) + (demapping\_layer\_output\_24\*-0.737797) );

output\_layer\_output\_121 = logistic( -0.375303 + (demapping\_layer\_output\_0\*-0.527312) + (demapping\_layer\_output\_1\*1.41727) + (demapping\_layer\_output\_2\*1.53871) + (demapping\_layer\_output\_3\*0.804328) + (demapping\_layer\_output\_4\*0.359621) + (demapping\_layer\_output\_5\*0.50182) + (demapping\_layer\_output\_6\*-1.63569) + (demapping\_layer\_output\_7\*-0.525008) + (demapping\_layer\_output\_8\*-0.401811) + (demapping\_layer\_output\_9\*0.821671) + (demapping\_layer\_output\_10\*-1.18968) + (demapping\_layer\_output\_11\*-0.563408) + (demapping\_layer\_output\_12\*-0.797231) + (demapping\_layer\_output\_13\*-0.188412) + (demapping\_layer\_output\_14\*-0.944096) + (demapping\_layer\_output\_15\*-0.0258628) + (demapping\_layer\_output\_16\*-0.658199) + (demapping\_layer\_output\_17\*0.622782) + (demapping\_layer\_output\_18\*0.426008) + (demapping\_layer\_output\_19\*-0.604345) + (demapping\_layer\_output\_20\*0.155636) + (demapping\_layer\_output\_21\*0.8778) + (demapping\_layer\_output\_22\*-1.16183) + (demapping\_layer\_output\_23\*0.261823) + (demapping\_layer\_output\_24\*0.687195) );

output\_layer\_output\_122 = logistic( -0.565728 + (demapping\_layer\_output\_0\*0.253508) + (demapping\_layer\_output\_1\*1.12224) + (demapping\_layer\_output\_2\*3.42717) + (demapping\_layer\_output\_3\*0.233286) + (demapping\_layer\_output\_4\*-2.88097) + (demapping\_layer\_output\_5\*-1.41351) + (demapping\_layer\_output\_6\*3.89312) + (demapping\_layer\_output\_7\*-2.27587) + (demapping\_layer\_output\_8\*-1.33911) + (demapping\_layer\_output\_9\*6.05419) + (demapping\_layer\_output\_10\*-0.437545) + (demapping\_layer\_output\_11\*0.703612) + (demapping\_layer\_output\_12\*-2.01918) + (demapping\_layer\_output\_13\*-6.37741) + (demapping\_layer\_output\_14\*-0.728758) + (demapping\_layer\_output\_15\*-3.4078) + (demapping\_layer\_output\_16\*0.193825) + (demapping\_layer\_output\_17\*-5.67786) + (demapping\_layer\_output\_18\*4.27448) + (demapping\_layer\_output\_19\*-0.567887) + (demapping\_layer\_output\_20\*-0.185755) + (demapping\_layer\_output\_21\*4.30921) + (demapping\_layer\_output\_22\*-0.813561) + (demapping\_layer\_output\_23\*-0.521009) + (demapping\_layer\_output\_24\*4.8993) );

output\_layer\_output\_123 = logistic( -0.619085 + (demapping\_layer\_output\_0\*-2.85276) + (demapping\_layer\_output\_1\*-1.94711) + (demapping\_layer\_output\_2\*-0.961656) + (demapping\_layer\_output\_3\*0.263708) + (demapping\_layer\_output\_4\*5.48852) + (demapping\_layer\_output\_5\*-3.63926) + (demapping\_layer\_output\_6\*-6.94925) + (demapping\_layer\_output\_7\*-2.47127) + (demapping\_layer\_output\_8\*-9.21267) + (demapping\_layer\_output\_9\*-5.45639) + (demapping\_layer\_output\_10\*1.02974) + (demapping\_layer\_output\_11\*6.11707) + (demapping\_layer\_output\_12\*-2.31524) + (demapping\_layer\_output\_13\*7.12079) + (demapping\_layer\_output\_14\*-0.815046) + (demapping\_layer\_output\_15\*4.9876) + (demapping\_layer\_output\_16\*0.453363) + (demapping\_layer\_output\_17\*2.06082) + (demapping\_layer\_output\_18\*-2.20363) + (demapping\_layer\_output\_19\*-0.697392) + (demapping\_layer\_output\_20\*-0.263103) + (demapping\_layer\_output\_21\*3.95341) + (demapping\_layer\_output\_22\*-0.255239) + (demapping\_layer\_output\_23\*0.424695) + (demapping\_layer\_output\_24\*-3.97797) );

output\_layer\_output\_124 = logistic( -1.04461 + (demapping\_layer\_output\_0\*0.315826) + (demapping\_layer\_output\_1\*0.439144) + (demapping\_layer\_output\_2\*2.03236) + (demapping\_layer\_output\_3\*-1.00189) + (demapping\_layer\_output\_4\*0.0750452) + (demapping\_layer\_output\_5\*-0.798366) + (demapping\_layer\_output\_6\*-3.24386) + (demapping\_layer\_output\_7\*-3.13414) + (demapping\_layer\_output\_8\*0.159598) + (demapping\_layer\_output\_9\*-0.0773786) + (demapping\_layer\_output\_10\*-1.08443) + (demapping\_layer\_output\_11\*1.33336) + (demapping\_layer\_output\_12\*0.940395) + (demapping\_layer\_output\_13\*0.176046) + (demapping\_layer\_output\_14\*-0.893913) + (demapping\_layer\_output\_15\*-2.14756) + (demapping\_layer\_output\_16\*1.05288) + (demapping\_layer\_output\_17\*-0.409656) + (demapping\_layer\_output\_18\*-0.902289) + (demapping\_layer\_output\_19\*-1.67842) + (demapping\_layer\_output\_20\*-0.426678) + (demapping\_layer\_output\_21\*-2.0582) + (demapping\_layer\_output\_22\*-0.922079) + (demapping\_layer\_output\_23\*0.637452) + (demapping\_layer\_output\_24\*-0.350556) );

output\_layer\_output\_125 = logistic( -1.84807 + (demapping\_layer\_output\_0\*-3.23842) + (demapping\_layer\_output\_1\*-0.611904) + (demapping\_layer\_output\_2\*0.412129) + (demapping\_layer\_output\_3\*0.571058) + (demapping\_layer\_output\_4\*-0.999826) + (demapping\_layer\_output\_5\*3.08399) + (demapping\_layer\_output\_6\*-2.16611) + (demapping\_layer\_output\_7\*-1.26783) + (demapping\_layer\_output\_8\*-0.583721) + (demapping\_layer\_output\_9\*0.0876132) + (demapping\_layer\_output\_10\*-0.943016) + (demapping\_layer\_output\_11\*0.119109) + (demapping\_layer\_output\_12\*-3.21852) + (demapping\_layer\_output\_13\*-1.17084) + (demapping\_layer\_output\_14\*-1.11339) + (demapping\_layer\_output\_15\*0.762559) + (demapping\_layer\_output\_16\*0.398189) + (demapping\_layer\_output\_17\*-0.114664) + (demapping\_layer\_output\_18\*-0.0360119) + (demapping\_layer\_output\_19\*-2.10811) + (demapping\_layer\_output\_20\*-0.800142) + (demapping\_layer\_output\_21\*-1.13158) + (demapping\_layer\_output\_22\*-0.625461) + (demapping\_layer\_output\_23\*-1.17187) + (demapping\_layer\_output\_24\*-1.60684) );

output\_layer\_output\_126 = logistic( -1.13895 + (demapping\_layer\_output\_0\*0.94098) + (demapping\_layer\_output\_1\*-1.77595) + (demapping\_layer\_output\_2\*0.23267) + (demapping\_layer\_output\_3\*-0.741001) + (demapping\_layer\_output\_4\*0.220657) + (demapping\_layer\_output\_5\*-0.103063) + (demapping\_layer\_output\_6\*-0.821365) + (demapping\_layer\_output\_7\*-1.56458) + (demapping\_layer\_output\_8\*-0.946895) + (demapping\_layer\_output\_9\*3.58334) + (demapping\_layer\_output\_10\*-1.03774) + (demapping\_layer\_output\_11\*1.29493) + (demapping\_layer\_output\_12\*-2.08625) + (demapping\_layer\_output\_13\*-0.728304) + (demapping\_layer\_output\_14\*-0.671236) + (demapping\_layer\_output\_15\*0.210015) + (demapping\_layer\_output\_16\*3.22921) + (demapping\_layer\_output\_17\*0.0452351) + (demapping\_layer\_output\_18\*-0.159343) + (demapping\_layer\_output\_19\*-1.59233) + (demapping\_layer\_output\_20\*1.3873) + (demapping\_layer\_output\_21\*-0.240847) + (demapping\_layer\_output\_22\*-1.05825) + (demapping\_layer\_output\_23\*0.366386) + (demapping\_layer\_output\_24\*0.859682) );

output\_layer\_output\_127 = logistic( -1.28972 + (demapping\_layer\_output\_0\*-1.65077) + (demapping\_layer\_output\_1\*-2.5421) + (demapping\_layer\_output\_2\*0.642048) + (demapping\_layer\_output\_3\*0.445893) + (demapping\_layer\_output\_4\*0.852761) + (demapping\_layer\_output\_5\*0.189447) + (demapping\_layer\_output\_6\*-0.214409) + (demapping\_layer\_output\_7\*-1.21681) + (demapping\_layer\_output\_8\*-1.63007) + (demapping\_layer\_output\_9\*0.00292473) + (demapping\_layer\_output\_10\*-2.5546) + (demapping\_layer\_output\_11\*-0.219684) + (demapping\_layer\_output\_12\*-2.14934) + (demapping\_layer\_output\_13\*0.861082) + (demapping\_layer\_output\_14\*-0.940909) + (demapping\_layer\_output\_15\*0.202592) + (demapping\_layer\_output\_16\*0.15821) + (demapping\_layer\_output\_17\*0.803698) + (demapping\_layer\_output\_18\*0.935461) + (demapping\_layer\_output\_19\*-1.26629) + (demapping\_layer\_output\_20\*-0.421457) + (demapping\_layer\_output\_21\*-0.868195) + (demapping\_layer\_output\_22\*-1.16202) + (demapping\_layer\_output\_23\*0.849938) + (demapping\_layer\_output\_24\*-0.569658) );

output\_layer\_output\_128 = logistic( 0.0202435 + (demapping\_layer\_output\_0\*0.0145771) + (demapping\_layer\_output\_1\*-1.18141) + (demapping\_layer\_output\_2\*1.19224) + (demapping\_layer\_output\_3\*-0.329953) + (demapping\_layer\_output\_4\*-0.389467) + (demapping\_layer\_output\_5\*-1.09467) + (demapping\_layer\_output\_6\*-0.141721) + (demapping\_layer\_output\_7\*-0.560103) + (demapping\_layer\_output\_8\*-0.529558) + (demapping\_layer\_output\_9\*0.202005) + (demapping\_layer\_output\_10\*-2.88923) + (demapping\_layer\_output\_11\*-0.341005) + (demapping\_layer\_output\_12\*0.200044) + (demapping\_layer\_output\_13\*0.737163) + (demapping\_layer\_output\_14\*1.16777) + (demapping\_layer\_output\_15\*-0.147848) + (demapping\_layer\_output\_16\*0.794638) + (demapping\_layer\_output\_17\*0.13737) + (demapping\_layer\_output\_18\*-0.413435) + (demapping\_layer\_output\_19\*-0.391619) + (demapping\_layer\_output\_20\*-0.524583) + (demapping\_layer\_output\_21\*-0.945668) + (demapping\_layer\_output\_22\*0.60493) + (demapping\_layer\_output\_23\*-1.07247) + (demapping\_layer\_output\_24\*-0.285461) );

output\_layer\_output\_129 = logistic( -1.04204 + (demapping\_layer\_output\_0\*0.793388) + (demapping\_layer\_output\_1\*-0.641552) + (demapping\_layer\_output\_2\*-0.755233) + (demapping\_layer\_output\_3\*0.233018) + (demapping\_layer\_output\_4\*1.03927) + (demapping\_layer\_output\_5\*-0.103289) + (demapping\_layer\_output\_6\*-0.353728) + (demapping\_layer\_output\_7\*-0.20264) + (demapping\_layer\_output\_8\*1.3689) + (demapping\_layer\_output\_9\*0.279819) + (demapping\_layer\_output\_10\*-0.646586) + (demapping\_layer\_output\_11\*1.31442) + (demapping\_layer\_output\_12\*-1.60794) + (demapping\_layer\_output\_13\*0.122278) + (demapping\_layer\_output\_14\*-1.47018) + (demapping\_layer\_output\_15\*-0.81025) + (demapping\_layer\_output\_16\*-0.248866) + (demapping\_layer\_output\_17\*-1.37999) + (demapping\_layer\_output\_18\*0.257582) + (demapping\_layer\_output\_19\*-1.6943) + (demapping\_layer\_output\_20\*-0.88676) + (demapping\_layer\_output\_21\*1.18682) + (demapping\_layer\_output\_22\*-1.88052) + (demapping\_layer\_output\_23\*0.305566) + (demapping\_layer\_output\_24\*-1.53067) );

output\_layer\_output\_130 = logistic( -0.00854116 + (demapping\_layer\_output\_0\*-0.193512) + (demapping\_layer\_output\_1\*-0.00409518) + (demapping\_layer\_output\_2\*1.25925) + (demapping\_layer\_output\_3\*-1.05208) + (demapping\_layer\_output\_4\*0.922467) + (demapping\_layer\_output\_5\*-1.35502) + (demapping\_layer\_output\_6\*0.457003) + (demapping\_layer\_output\_7\*-1.26475) + (demapping\_layer\_output\_8\*-2.04861) + (demapping\_layer\_output\_9\*1.2818) + (demapping\_layer\_output\_10\*-1.29582) + (demapping\_layer\_output\_11\*-1.92242) + (demapping\_layer\_output\_12\*0.46859) + (demapping\_layer\_output\_13\*0.786496) + (demapping\_layer\_output\_14\*0.00306359) + (demapping\_layer\_output\_15\*0.574401) + (demapping\_layer\_output\_16\*-0.000960151) + (demapping\_layer\_output\_17\*-1.64927) + (demapping\_layer\_output\_18\*-0.162904) + (demapping\_layer\_output\_19\*0.0132354) + (demapping\_layer\_output\_20\*0.272297) + (demapping\_layer\_output\_21\*-0.612236) + (demapping\_layer\_output\_22\*-0.274129) + (demapping\_layer\_output\_23\*0.166085) + (demapping\_layer\_output\_24\*2.26172) );

output\_layer\_output\_131 = logistic( -0.741322 + (demapping\_layer\_output\_0\*-0.906817) + (demapping\_layer\_output\_1\*0.58796) + (demapping\_layer\_output\_2\*-1.09103) + (demapping\_layer\_output\_3\*-1.41504) + (demapping\_layer\_output\_4\*-0.0436368) + (demapping\_layer\_output\_5\*0.132691) + (demapping\_layer\_output\_6\*-2.23971) + (demapping\_layer\_output\_7\*-0.904481) + (demapping\_layer\_output\_8\*1.00225) + (demapping\_layer\_output\_9\*-2.11698) + (demapping\_layer\_output\_10\*-0.227895) + (demapping\_layer\_output\_11\*-0.796767) + (demapping\_layer\_output\_12\*-1.12714) + (demapping\_layer\_output\_13\*0.420953) + (demapping\_layer\_output\_14\*-0.281605) + (demapping\_layer\_output\_15\*1.5145) + (demapping\_layer\_output\_16\*1.95878) + (demapping\_layer\_output\_17\*-1.31488) + (demapping\_layer\_output\_18\*1.98493) + (demapping\_layer\_output\_19\*-1.17269) + (demapping\_layer\_output\_20\*-2.10138) + (demapping\_layer\_output\_21\*-0.349377) + (demapping\_layer\_output\_22\*1.33152) + (demapping\_layer\_output\_23\*-0.105335) + (demapping\_layer\_output\_24\*0.695662) );

output\_layer\_output\_132 = logistic( -0.105905 + (demapping\_layer\_output\_0\*-1.35248) + (demapping\_layer\_output\_1\*0.517795) + (demapping\_layer\_output\_2\*0.0921316) + (demapping\_layer\_output\_3\*0.438475) + (demapping\_layer\_output\_4\*1.26702) + (demapping\_layer\_output\_5\*-0.614043) + (demapping\_layer\_output\_6\*0.885484) + (demapping\_layer\_output\_7\*0.741285) + (demapping\_layer\_output\_8\*1.10304) + (demapping\_layer\_output\_9\*-2.37104) + (demapping\_layer\_output\_10\*-1.74767) + (demapping\_layer\_output\_11\*-1.23135) + (demapping\_layer\_output\_12\*-1.79824) + (demapping\_layer\_output\_13\*-1.49859) + (demapping\_layer\_output\_14\*-0.19001) + (demapping\_layer\_output\_15\*-0.523829) + (demapping\_layer\_output\_16\*2.33736) + (demapping\_layer\_output\_17\*0.541862) + (demapping\_layer\_output\_18\*0.266171) + (demapping\_layer\_output\_19\*-0.797002) + (demapping\_layer\_output\_20\*-0.235909) + (demapping\_layer\_output\_21\*0.0825575) + (demapping\_layer\_output\_22\*0.901219) + (demapping\_layer\_output\_23\*1.81476) + (demapping\_layer\_output\_24\*-0.582329) );

output\_layer\_output\_133 = logistic( -0.192805 + (demapping\_layer\_output\_0\*-2.16002) + (demapping\_layer\_output\_1\*3.79656) + (demapping\_layer\_output\_2\*1.70018) + (demapping\_layer\_output\_3\*-9.50876) + (demapping\_layer\_output\_4\*-2.42884) + (demapping\_layer\_output\_5\*-1.35454) + (demapping\_layer\_output\_6\*1.13789) + (demapping\_layer\_output\_7\*-0.283148) + (demapping\_layer\_output\_8\*-1.25913) + (demapping\_layer\_output\_9\*0.25574) + (demapping\_layer\_output\_10\*-4.97393) + (demapping\_layer\_output\_11\*1.85698) + (demapping\_layer\_output\_12\*-1.95709) + (demapping\_layer\_output\_13\*-1.22952) + (demapping\_layer\_output\_14\*-0.632635) + (demapping\_layer\_output\_15\*3.74178) + (demapping\_layer\_output\_16\*1.74061) + (demapping\_layer\_output\_17\*2.23699) + (demapping\_layer\_output\_18\*0.959728) + (demapping\_layer\_output\_19\*-0.625481) + (demapping\_layer\_output\_20\*-3.65992) + (demapping\_layer\_output\_21\*-0.606029) + (demapping\_layer\_output\_22\*-0.535724) + (demapping\_layer\_output\_23\*2.40999) + (demapping\_layer\_output\_24\*-0.601725) );

output\_layer\_output\_134 = logistic( -1.17075 + (demapping\_layer\_output\_0\*1.29205) + (demapping\_layer\_output\_1\*-0.116305) + (demapping\_layer\_output\_2\*2.40603) + (demapping\_layer\_output\_3\*-0.850804) + (demapping\_layer\_output\_4\*0.534532) + (demapping\_layer\_output\_5\*-0.0842045) + (demapping\_layer\_output\_6\*-7.28306) + (demapping\_layer\_output\_7\*0.498517) + (demapping\_layer\_output\_8\*0.52442) + (demapping\_layer\_output\_9\*-0.806915) + (demapping\_layer\_output\_10\*-1.19723) + (demapping\_layer\_output\_11\*-2.70893) + (demapping\_layer\_output\_12\*-5.04225) + (demapping\_layer\_output\_13\*-0.751966) + (demapping\_layer\_output\_14\*-0.70478) + (demapping\_layer\_output\_15\*0.952157) + (demapping\_layer\_output\_16\*0.953997) + (demapping\_layer\_output\_17\*-1.92828) + (demapping\_layer\_output\_18\*2.87226) + (demapping\_layer\_output\_19\*-1.27241) + (demapping\_layer\_output\_20\*-0.236821) + (demapping\_layer\_output\_21\*2.96303) + (demapping\_layer\_output\_22\*-0.979848) + (demapping\_layer\_output\_23\*0.333373) + (demapping\_layer\_output\_24\*0.202277) );

output\_layer\_output\_135 = logistic( -0.90992 + (demapping\_layer\_output\_0\*0.129071) + (demapping\_layer\_output\_1\*0.440976) + (demapping\_layer\_output\_2\*0.266137) + (demapping\_layer\_output\_3\*0.15192) + (demapping\_layer\_output\_4\*0.980391) + (demapping\_layer\_output\_5\*-0.92002) + (demapping\_layer\_output\_6\*0.41675) + (demapping\_layer\_output\_7\*-0.53042) + (demapping\_layer\_output\_8\*0.367603) + (demapping\_layer\_output\_9\*-0.810299) + (demapping\_layer\_output\_10\*0.30342) + (demapping\_layer\_output\_11\*0.500562) + (demapping\_layer\_output\_12\*-1.16188) + (demapping\_layer\_output\_13\*-0.325522) + (demapping\_layer\_output\_14\*-0.424776) + (demapping\_layer\_output\_15\*0.110839) + (demapping\_layer\_output\_16\*-1.57793) + (demapping\_layer\_output\_17\*0.814472) + (demapping\_layer\_output\_18\*-0.720311) + (demapping\_layer\_output\_19\*-1.0434) + (demapping\_layer\_output\_20\*-0.661626) + (demapping\_layer\_output\_21\*0.0589664) + (demapping\_layer\_output\_22\*-0.99203) + (demapping\_layer\_output\_23\*0.153974) + (demapping\_layer\_output\_24\*-0.306744) );

output\_layer\_output\_136 = logistic( -1.17218 + (demapping\_layer\_output\_0\*2.44513) + (demapping\_layer\_output\_1\*2.9696) + (demapping\_layer\_output\_2\*0.730239) + (demapping\_layer\_output\_3\*-0.00610129) + (demapping\_layer\_output\_4\*-0.0816157) + (demapping\_layer\_output\_5\*-0.257461) + (demapping\_layer\_output\_6\*0.554416) + (demapping\_layer\_output\_7\*1.75813) + (demapping\_layer\_output\_8\*-0.690692) + (demapping\_layer\_output\_9\*-0.465642) + (demapping\_layer\_output\_10\*-0.876882) + (demapping\_layer\_output\_11\*0.0791779) + (demapping\_layer\_output\_12\*-2.85723) + (demapping\_layer\_output\_13\*-1.51683) + (demapping\_layer\_output\_14\*-1.04884) + (demapping\_layer\_output\_15\*-1.44295) + (demapping\_layer\_output\_16\*2.55405) + (demapping\_layer\_output\_17\*-0.726069) + (demapping\_layer\_output\_18\*1.97766) + (demapping\_layer\_output\_19\*-1.54207) + (demapping\_layer\_output\_20\*-0.0719769) + (demapping\_layer\_output\_21\*2.48854) + (demapping\_layer\_output\_22\*-0.820841) + (demapping\_layer\_output\_23\*0.101285) + (demapping\_layer\_output\_24\*0.345465) );

output\_layer\_output\_137 = logistic( -0.93597 + (demapping\_layer\_output\_0\*0.265036) + (demapping\_layer\_output\_1\*0.0517214) + (demapping\_layer\_output\_2\*1.78794) + (demapping\_layer\_output\_3\*-0.0825217) + (demapping\_layer\_output\_4\*-1.16868) + (demapping\_layer\_output\_5\*-0.574554) + (demapping\_layer\_output\_6\*-1.06331) + (demapping\_layer\_output\_7\*0.909143) + (demapping\_layer\_output\_8\*0.395198) + (demapping\_layer\_output\_9\*-0.845041) + (demapping\_layer\_output\_10\*-1.00288) + (demapping\_layer\_output\_11\*-1.16925) + (demapping\_layer\_output\_12\*0.145701) + (demapping\_layer\_output\_13\*-0.312972) + (demapping\_layer\_output\_14\*-0.786126) + (demapping\_layer\_output\_15\*-0.783608) + (demapping\_layer\_output\_16\*1.29542) + (demapping\_layer\_output\_17\*-0.507668) + (demapping\_layer\_output\_18\*0.620022) + (demapping\_layer\_output\_19\*-1.29968) + (demapping\_layer\_output\_20\*-0.101668) + (demapping\_layer\_output\_21\*-0.787133) + (demapping\_layer\_output\_22\*-0.580715) + (demapping\_layer\_output\_23\*0.0588191) + (demapping\_layer\_output\_24\*0.15239) );

output\_layer\_output\_138 = logistic( -0.0286867 + (demapping\_layer\_output\_0\*-5.44656) + (demapping\_layer\_output\_1\*0.0967795) + (demapping\_layer\_output\_2\*4.49195) + (demapping\_layer\_output\_3\*-1.31059) + (demapping\_layer\_output\_4\*-1.57681) + (demapping\_layer\_output\_5\*-0.462477) + (demapping\_layer\_output\_6\*-0.223108) + (demapping\_layer\_output\_7\*1.54397) + (demapping\_layer\_output\_8\*-2.79155) + (demapping\_layer\_output\_9\*-3.27553) + (demapping\_layer\_output\_10\*-0.903859) + (demapping\_layer\_output\_11\*-3.90105) + (demapping\_layer\_output\_12\*-0.42212) + (demapping\_layer\_output\_13\*-0.462818) + (demapping\_layer\_output\_14\*0.00110768) + (demapping\_layer\_output\_15\*-0.950508) + (demapping\_layer\_output\_16\*0.733176) + (demapping\_layer\_output\_17\*-1.61689) + (demapping\_layer\_output\_18\*-6.10386) + (demapping\_layer\_output\_19\*-0.134913) + (demapping\_layer\_output\_20\*0.0179248) + (demapping\_layer\_output\_21\*5.55897) + (demapping\_layer\_output\_22\*-0.185408) + (demapping\_layer\_output\_23\*-2.26739) + (demapping\_layer\_output\_24\*-0.892434) );

output\_layer\_output\_139 = logistic( 0.477047 + (demapping\_layer\_output\_0\*0.434958) + (demapping\_layer\_output\_1\*0.96339) + (demapping\_layer\_output\_2\*0.929685) + (demapping\_layer\_output\_3\*0.389636) + (demapping\_layer\_output\_4\*0.994478) + (demapping\_layer\_output\_5\*-1.47179) + (demapping\_layer\_output\_6\*-0.442722) + (demapping\_layer\_output\_7\*0.208608) + (demapping\_layer\_output\_8\*-0.680118) + (demapping\_layer\_output\_9\*-0.105969) + (demapping\_layer\_output\_10\*-1.07094) + (demapping\_layer\_output\_11\*0.0880513) + (demapping\_layer\_output\_12\*-1.25555) + (demapping\_layer\_output\_13\*-0.0748674) + (demapping\_layer\_output\_14\*-0.453573) + (demapping\_layer\_output\_15\*0.00670148) + (demapping\_layer\_output\_16\*-1.1918) + (demapping\_layer\_output\_17\*-0.128225) + (demapping\_layer\_output\_18\*-0.170007) + (demapping\_layer\_output\_19\*-0.0316626) + (demapping\_layer\_output\_20\*1.24615) + (demapping\_layer\_output\_21\*0.57054) + (demapping\_layer\_output\_22\*-2.51486) + (demapping\_layer\_output\_23\*1.21399) + (demapping\_layer\_output\_24\*0.621864) );

output\_layer\_output\_140 = logistic( -0.416233 + (demapping\_layer\_output\_0\*-0.343911) + (demapping\_layer\_output\_1\*1.00136) + (demapping\_layer\_output\_2\*0.420605) + (demapping\_layer\_output\_3\*0.0439333) + (demapping\_layer\_output\_4\*1.09782) + (demapping\_layer\_output\_5\*-0.87471) + (demapping\_layer\_output\_6\*-2.15868) + (demapping\_layer\_output\_7\*-0.944) + (demapping\_layer\_output\_8\*0.114789) + (demapping\_layer\_output\_9\*-0.588891) + (demapping\_layer\_output\_10\*-1.61092) + (demapping\_layer\_output\_11\*-2.40416) + (demapping\_layer\_output\_12\*-0.41235) + (demapping\_layer\_output\_13\*-0.384851) + (demapping\_layer\_output\_14\*-0.00123153) + (demapping\_layer\_output\_15\*-0.260847) + (demapping\_layer\_output\_16\*0.14535) + (demapping\_layer\_output\_17\*-0.47937) + (demapping\_layer\_output\_18\*0.0839857) + (demapping\_layer\_output\_19\*-0.532004) + (demapping\_layer\_output\_20\*-0.633559) + (demapping\_layer\_output\_21\*1.48251) + (demapping\_layer\_output\_22\*-0.304212) + (demapping\_layer\_output\_23\*0.969837) + (demapping\_layer\_output\_24\*0.0340377) );

output\_layer\_output\_141 = logistic( -1.60042 + (demapping\_layer\_output\_0\*-0.64724) + (demapping\_layer\_output\_1\*0.622341) + (demapping\_layer\_output\_2\*5.20953) + (demapping\_layer\_output\_3\*-2.35702) + (demapping\_layer\_output\_4\*-5.81694) + (demapping\_layer\_output\_5\*-1.94105) + (demapping\_layer\_output\_6\*-1.16899) + (demapping\_layer\_output\_7\*-1.83986) + (demapping\_layer\_output\_8\*-0.554385) + (demapping\_layer\_output\_9\*0.43608) + (demapping\_layer\_output\_10\*1.32194) + (demapping\_layer\_output\_11\*0.313977) + (demapping\_layer\_output\_12\*-3.32704) + (demapping\_layer\_output\_13\*-0.380027) + (demapping\_layer\_output\_14\*-1.80684) + (demapping\_layer\_output\_15\*0.380281) + (demapping\_layer\_output\_16\*-0.608684) + (demapping\_layer\_output\_17\*-0.059932) + (demapping\_layer\_output\_18\*-0.621787) + (demapping\_layer\_output\_19\*-2.26265) + (demapping\_layer\_output\_20\*-0.579585) + (demapping\_layer\_output\_21\*0.426955) + (demapping\_layer\_output\_22\*-1.30438) + (demapping\_layer\_output\_23\*-0.673192) + (demapping\_layer\_output\_24\*-1.28787) );

output\_layer\_output\_142 = logistic( -0.880202 + (demapping\_layer\_output\_0\*0.27165) + (demapping\_layer\_output\_1\*1.04056) + (demapping\_layer\_output\_2\*1.71798) + (demapping\_layer\_output\_3\*-0.930522) + (demapping\_layer\_output\_4\*-0.0407929) + (demapping\_layer\_output\_5\*-1.59081) + (demapping\_layer\_output\_6\*-3.68547) + (demapping\_layer\_output\_7\*1.49832) + (demapping\_layer\_output\_8\*-0.688231) + (demapping\_layer\_output\_9\*-1.71836) + (demapping\_layer\_output\_10\*-0.715604) + (demapping\_layer\_output\_11\*1.59061) + (demapping\_layer\_output\_12\*-0.932842) + (demapping\_layer\_output\_13\*-0.237827) + (demapping\_layer\_output\_14\*-2.39108) + (demapping\_layer\_output\_15\*-2.36443) + (demapping\_layer\_output\_16\*0.758385) + (demapping\_layer\_output\_17\*0.348109) + (demapping\_layer\_output\_18\*-0.0966102) + (demapping\_layer\_output\_19\*-0.889364) + (demapping\_layer\_output\_20\*1.35128) + (demapping\_layer\_output\_21\*1.59592) + (demapping\_layer\_output\_22\*-1.39153) + (demapping\_layer\_output\_23\*-0.152935) + (demapping\_layer\_output\_24\*0.538766) );

output\_layer\_output\_143 = logistic( -2.08095 + (demapping\_layer\_output\_0\*-1.17165) + (demapping\_layer\_output\_1\*-0.213336) + (demapping\_layer\_output\_2\*-0.512599) + (demapping\_layer\_output\_3\*-0.189752) + (demapping\_layer\_output\_4\*0.711234) + (demapping\_layer\_output\_5\*-0.19419) + (demapping\_layer\_output\_6\*0.728696) + (demapping\_layer\_output\_7\*-1.21877) + (demapping\_layer\_output\_8\*-0.729953) + (demapping\_layer\_output\_9\*0.230843) + (demapping\_layer\_output\_10\*0.862243) + (demapping\_layer\_output\_11\*0.720929) + (demapping\_layer\_output\_12\*-0.0875227) + (demapping\_layer\_output\_13\*-0.964185) + (demapping\_layer\_output\_14\*-0.392171) + (demapping\_layer\_output\_15\*-0.11726) + (demapping\_layer\_output\_16\*1.161) + (demapping\_layer\_output\_17\*-0.469769) + (demapping\_layer\_output\_18\*0.19503) + (demapping\_layer\_output\_19\*-2.07356) + (demapping\_layer\_output\_20\*0.520969) + (demapping\_layer\_output\_21\*0.616705) + (demapping\_layer\_output\_22\*-0.949665) + (demapping\_layer\_output\_23\*1.02367) + (demapping\_layer\_output\_24\*-0.67552) );

output\_layer\_output\_144 = logistic( -0.142878 + (demapping\_layer\_output\_0\*-3.00112) + (demapping\_layer\_output\_1\*-1.4107) + (demapping\_layer\_output\_2\*0.497472) + (demapping\_layer\_output\_3\*1.19114) + (demapping\_layer\_output\_4\*1.58203) + (demapping\_layer\_output\_5\*-0.48807) + (demapping\_layer\_output\_6\*-1.02006) + (demapping\_layer\_output\_7\*-0.564968) + (demapping\_layer\_output\_8\*-1.9486) + (demapping\_layer\_output\_9\*-0.224272) + (demapping\_layer\_output\_10\*-2.96058) + (demapping\_layer\_output\_11\*-0.753243) + (demapping\_layer\_output\_12\*1.00879) + (demapping\_layer\_output\_13\*-3.57628) + (demapping\_layer\_output\_14\*-0.209429) + (demapping\_layer\_output\_15\*-1.72527) + (demapping\_layer\_output\_16\*-0.0387617) + (demapping\_layer\_output\_17\*-8.04236) + (demapping\_layer\_output\_18\*1.43383) + (demapping\_layer\_output\_19\*-0.327051) + (demapping\_layer\_output\_20\*-1.40899) + (demapping\_layer\_output\_21\*-1.36082) + (demapping\_layer\_output\_22\*-2.56989) + (demapping\_layer\_output\_23\*4.21275) + (demapping\_layer\_output\_24\*2.03861) );

output\_layer\_output\_145 = logistic( -1.21239 + (demapping\_layer\_output\_0\*0.39875) + (demapping\_layer\_output\_1\*-0.323934) + (demapping\_layer\_output\_2\*0.785572) + (demapping\_layer\_output\_3\*0.520955) + (demapping\_layer\_output\_4\*0.494972) + (demapping\_layer\_output\_5\*-1.45576) + (demapping\_layer\_output\_6\*1.08738) + (demapping\_layer\_output\_7\*-0.186218) + (demapping\_layer\_output\_8\*-0.656525) + (demapping\_layer\_output\_9\*-0.444721) + (demapping\_layer\_output\_10\*-1.4844) + (demapping\_layer\_output\_11\*-0.0515262) + (demapping\_layer\_output\_12\*1.03044) + (demapping\_layer\_output\_13\*-0.283721) + (demapping\_layer\_output\_14\*0.271682) + (demapping\_layer\_output\_15\*0.914295) + (demapping\_layer\_output\_16\*0.495302) + (demapping\_layer\_output\_17\*-0.814627) + (demapping\_layer\_output\_18\*-0.349872) + (demapping\_layer\_output\_19\*-1.58398) + (demapping\_layer\_output\_20\*-1.02848) + (demapping\_layer\_output\_21\*-0.179864) + (demapping\_layer\_output\_22\*0.00610233) + (demapping\_layer\_output\_23\*0.840392) + (demapping\_layer\_output\_24\*0.971505) );

output\_layer\_output\_146 = logistic( -0.338789 + (demapping\_layer\_output\_0\*-2.34101) + (demapping\_layer\_output\_1\*-1.55812) + (demapping\_layer\_output\_2\*1.34469) + (demapping\_layer\_output\_3\*-1.71107) + (demapping\_layer\_output\_4\*-0.00540727) + (demapping\_layer\_output\_5\*0.342648) + (demapping\_layer\_output\_6\*-1.62019) + (demapping\_layer\_output\_7\*-0.993218) + (demapping\_layer\_output\_8\*-1.72494) + (demapping\_layer\_output\_9\*-0.740658) + (demapping\_layer\_output\_10\*-1.61605) + (demapping\_layer\_output\_11\*-3.49429) + (demapping\_layer\_output\_12\*-2.43662) + (demapping\_layer\_output\_13\*-1.85667) + (demapping\_layer\_output\_14\*0.411734) + (demapping\_layer\_output\_15\*0.666056) + (demapping\_layer\_output\_16\*0.577877) + (demapping\_layer\_output\_17\*-4.86821) + (demapping\_layer\_output\_18\*0.577847) + (demapping\_layer\_output\_19\*-0.0288543) + (demapping\_layer\_output\_20\*-1.64939) + (demapping\_layer\_output\_21\*-1.05616) + (demapping\_layer\_output\_22\*-0.797266) + (demapping\_layer\_output\_23\*-2.5472) + (demapping\_layer\_output\_24\*-3.58119) );

output\_layer\_output\_147 = logistic( -0.660143 + (demapping\_layer\_output\_0\*-0.28018) + (demapping\_layer\_output\_1\*0.36436) + (demapping\_layer\_output\_2\*0.863649) + (demapping\_layer\_output\_3\*-2.76023) + (demapping\_layer\_output\_4\*0.813159) + (demapping\_layer\_output\_5\*-0.67164) + (demapping\_layer\_output\_6\*-2.72168) + (demapping\_layer\_output\_7\*-3.03251) + (demapping\_layer\_output\_8\*-1.06046) + (demapping\_layer\_output\_9\*-0.0781071) + (demapping\_layer\_output\_10\*-0.0907481) + (demapping\_layer\_output\_11\*2.19179) + (demapping\_layer\_output\_12\*-5.22186) + (demapping\_layer\_output\_13\*-2.38409) + (demapping\_layer\_output\_14\*0.525225) + (demapping\_layer\_output\_15\*-1.77632) + (demapping\_layer\_output\_16\*0.805142) + (demapping\_layer\_output\_17\*-0.108644) + (demapping\_layer\_output\_18\*-0.296398) + (demapping\_layer\_output\_19\*-1.1702) + (demapping\_layer\_output\_20\*-0.999122) + (demapping\_layer\_output\_21\*0.292404) + (demapping\_layer\_output\_22\*0.17816) + (demapping\_layer\_output\_23\*1.90042) + (demapping\_layer\_output\_24\*-0.715338) );

output\_layer\_output\_148 = logistic( -1.41022 + (demapping\_layer\_output\_0\*-1.28199) + (demapping\_layer\_output\_1\*-1.09764) + (demapping\_layer\_output\_2\*0.988305) + (demapping\_layer\_output\_3\*-0.650388) + (demapping\_layer\_output\_4\*0.128551) + (demapping\_layer\_output\_5\*-0.847226) + (demapping\_layer\_output\_6\*0.292144) + (demapping\_layer\_output\_7\*-1.47735) + (demapping\_layer\_output\_8\*-1.01994) + (demapping\_layer\_output\_9\*0.926998) + (demapping\_layer\_output\_10\*-0.901881) + (demapping\_layer\_output\_11\*0.0738039) + (demapping\_layer\_output\_12\*-4.02931) + (demapping\_layer\_output\_13\*-1.85497) + (demapping\_layer\_output\_14\*-0.991725) + (demapping\_layer\_output\_15\*0.883241) + (demapping\_layer\_output\_16\*-1.49401) + (demapping\_layer\_output\_17\*-0.0202981) + (demapping\_layer\_output\_18\*-1.0162) + (demapping\_layer\_output\_19\*-1.48414) + (demapping\_layer\_output\_20\*-1.05469) + (demapping\_layer\_output\_21\*2.00999) + (demapping\_layer\_output\_22\*-1.32047) + (demapping\_layer\_output\_23\*0.772417) + (demapping\_layer\_output\_24\*-0.330861) );

output\_layer\_output\_149 = logistic( -0.33493 + (demapping\_layer\_output\_0\*1.13511) + (demapping\_layer\_output\_1\*-1.59861) + (demapping\_layer\_output\_2\*-1.34254) + (demapping\_layer\_output\_3\*-2.05054) + (demapping\_layer\_output\_4\*2.22726) + (demapping\_layer\_output\_5\*-1.00109) + (demapping\_layer\_output\_6\*-1.23729) + (demapping\_layer\_output\_7\*-0.248805) + (demapping\_layer\_output\_8\*-0.342888) + (demapping\_layer\_output\_9\*-0.160914) + (demapping\_layer\_output\_10\*0.582953) + (demapping\_layer\_output\_11\*0.21261) + (demapping\_layer\_output\_12\*2.06748) + (demapping\_layer\_output\_13\*-0.189267) + (demapping\_layer\_output\_14\*-2.66158) + (demapping\_layer\_output\_15\*0.391076) + (demapping\_layer\_output\_16\*3.87468) + (demapping\_layer\_output\_17\*-0.495887) + (demapping\_layer\_output\_18\*-0.964912) + (demapping\_layer\_output\_19\*-1.64994) + (demapping\_layer\_output\_20\*1.47899) + (demapping\_layer\_output\_21\*1.65655) + (demapping\_layer\_output\_22\*-0.838908) + (demapping\_layer\_output\_23\*-0.239526) + (demapping\_layer\_output\_24\*-1.0921) );

output\_layer\_output\_150 = logistic( -1.14576 + (demapping\_layer\_output\_0\*1.42514) + (demapping\_layer\_output\_1\*-1.05754) + (demapping\_layer\_output\_2\*1.20285) + (demapping\_layer\_output\_3\*0.454459) + (demapping\_layer\_output\_4\*-0.247597) + (demapping\_layer\_output\_5\*-2.13801) + (demapping\_layer\_output\_6\*-0.248451) + (demapping\_layer\_output\_7\*-1.26011) + (demapping\_layer\_output\_8\*-0.457115) + (demapping\_layer\_output\_9\*1.47064) + (demapping\_layer\_output\_10\*0.14308) + (demapping\_layer\_output\_11\*1.85353) + (demapping\_layer\_output\_12\*-0.0946231) + (demapping\_layer\_output\_13\*-0.357232) + (demapping\_layer\_output\_14\*0.244297) + (demapping\_layer\_output\_15\*-0.752083) + (demapping\_layer\_output\_16\*1.25517) + (demapping\_layer\_output\_17\*-2.25825) + (demapping\_layer\_output\_18\*-0.545707) + (demapping\_layer\_output\_19\*-0.963782) + (demapping\_layer\_output\_20\*1.03878) + (demapping\_layer\_output\_21\*-0.833552) + (demapping\_layer\_output\_22\*-0.869074) + (demapping\_layer\_output\_23\*-0.251378) + (demapping\_layer\_output\_24\*-0.180642) );

output\_layer\_output\_151 = logistic( -0.306137 + (demapping\_layer\_output\_0\*-0.194876) + (demapping\_layer\_output\_1\*-0.0288468) + (demapping\_layer\_output\_2\*0.47719) + (demapping\_layer\_output\_3\*0.182255) + (demapping\_layer\_output\_4\*0.267585) + (demapping\_layer\_output\_5\*0.579385) + (demapping\_layer\_output\_6\*-0.279674) + (demapping\_layer\_output\_7\*-0.952747) + (demapping\_layer\_output\_8\*-0.152248) + (demapping\_layer\_output\_9\*0.0956751) + (demapping\_layer\_output\_10\*-0.24251) + (demapping\_layer\_output\_11\*0.277261) + (demapping\_layer\_output\_12\*0.061166) + (demapping\_layer\_output\_13\*0.301039) + (demapping\_layer\_output\_14\*-0.630664) + (demapping\_layer\_output\_15\*-0.424598) + (demapping\_layer\_output\_16\*0.028335) + (demapping\_layer\_output\_17\*0.376696) + (demapping\_layer\_output\_18\*-0.154285) + (demapping\_layer\_output\_19\*-0.537496) + (demapping\_layer\_output\_20\*-0.296346) + (demapping\_layer\_output\_21\*0.0629252) + (demapping\_layer\_output\_22\*-0.854546) + (demapping\_layer\_output\_23\*0.193187) + (demapping\_layer\_output\_24\*0.0607258) );

output\_layer\_output\_152 = logistic( -1.04044 + (demapping\_layer\_output\_0\*-0.897386) + (demapping\_layer\_output\_1\*-0.639223) + (demapping\_layer\_output\_2\*0.773791) + (demapping\_layer\_output\_3\*-0.530039) + (demapping\_layer\_output\_4\*-0.0518082) + (demapping\_layer\_output\_5\*-0.112914) + (demapping\_layer\_output\_6\*-0.544831) + (demapping\_layer\_output\_7\*-0.378566) + (demapping\_layer\_output\_8\*0.454418) + (demapping\_layer\_output\_9\*-1.85178) + (demapping\_layer\_output\_10\*-1.4668) + (demapping\_layer\_output\_11\*0.62181) + (demapping\_layer\_output\_12\*-0.335938) + (demapping\_layer\_output\_13\*0.279876) + (demapping\_layer\_output\_14\*-0.975578) + (demapping\_layer\_output\_15\*1.0775) + (demapping\_layer\_output\_16\*-0.479987) + (demapping\_layer\_output\_17\*-0.568713) + (demapping\_layer\_output\_18\*-0.231535) + (demapping\_layer\_output\_19\*-1.07535) + (demapping\_layer\_output\_20\*-0.884638) + (demapping\_layer\_output\_21\*0.633156) + (demapping\_layer\_output\_22\*-1.24868) + (demapping\_layer\_output\_23\*-0.875424) + (demapping\_layer\_output\_24\*-0.658301) );

output\_layer\_output\_153 = logistic( -0.924777 + (demapping\_layer\_output\_0\*-0.245091) + (demapping\_layer\_output\_1\*0.270786) + (demapping\_layer\_output\_2\*0.193566) + (demapping\_layer\_output\_3\*-0.515052) + (demapping\_layer\_output\_4\*-1.38557) + (demapping\_layer\_output\_5\*-0.171532) + (demapping\_layer\_output\_6\*-3.40087) + (demapping\_layer\_output\_7\*-0.757515) + (demapping\_layer\_output\_8\*-0.0994821) + (demapping\_layer\_output\_9\*0.404457) + (demapping\_layer\_output\_10\*1.22167) + (demapping\_layer\_output\_11\*-2.42663) + (demapping\_layer\_output\_12\*-0.826629) + (demapping\_layer\_output\_13\*-0.15851) + (demapping\_layer\_output\_14\*-0.500208) + (demapping\_layer\_output\_15\*-0.879371) + (demapping\_layer\_output\_16\*0.886892) + (demapping\_layer\_output\_17\*-0.524593) + (demapping\_layer\_output\_18\*-0.971166) + (demapping\_layer\_output\_19\*-1.25475) + (demapping\_layer\_output\_20\*-0.368644) + (demapping\_layer\_output\_21\*1.00692) + (demapping\_layer\_output\_22\*-3.69389) + (demapping\_layer\_output\_23\*1.05511) + (demapping\_layer\_output\_24\*1.34218) );

output\_layer\_output\_154 = logistic( -1.02396 + (demapping\_layer\_output\_0\*0.0245668) + (demapping\_layer\_output\_1\*-0.616038) + (demapping\_layer\_output\_2\*0.485668) + (demapping\_layer\_output\_3\*-0.937098) + (demapping\_layer\_output\_4\*0.948558) + (demapping\_layer\_output\_5\*-1.74892) + (demapping\_layer\_output\_6\*0.263727) + (demapping\_layer\_output\_7\*-1.58711) + (demapping\_layer\_output\_8\*-0.230884) + (demapping\_layer\_output\_9\*-0.894067) + (demapping\_layer\_output\_10\*-3.31862) + (demapping\_layer\_output\_11\*-0.977673) + (demapping\_layer\_output\_12\*0.601352) + (demapping\_layer\_output\_13\*0.853225) + (demapping\_layer\_output\_14\*-6.13861) + (demapping\_layer\_output\_15\*-0.960399) + (demapping\_layer\_output\_16\*0.369414) + (demapping\_layer\_output\_17\*-0.226851) + (demapping\_layer\_output\_18\*2.24232) + (demapping\_layer\_output\_19\*-1.79936) + (demapping\_layer\_output\_20\*2.61821) + (demapping\_layer\_output\_21\*1.18451) + (demapping\_layer\_output\_22\*-0.419374) + (demapping\_layer\_output\_23\*-0.373547) + (demapping\_layer\_output\_24\*-0.0867226) );

output\_layer\_output\_155 = logistic( -0.646442 + (demapping\_layer\_output\_0\*-0.233537) + (demapping\_layer\_output\_1\*0.321251) + (demapping\_layer\_output\_2\*3.45316) + (demapping\_layer\_output\_3\*-0.409741) + (demapping\_layer\_output\_4\*-1.23648) + (demapping\_layer\_output\_5\*-0.975645) + (demapping\_layer\_output\_6\*-0.770481) + (demapping\_layer\_output\_7\*-3.57493) + (demapping\_layer\_output\_8\*-0.00344442) + (demapping\_layer\_output\_9\*0.842707) + (demapping\_layer\_output\_10\*-0.940568) + (demapping\_layer\_output\_11\*-1.05771) + (demapping\_layer\_output\_12\*0.262958) + (demapping\_layer\_output\_13\*0.099435) + (demapping\_layer\_output\_14\*-0.862424) + (demapping\_layer\_output\_15\*0.281565) + (demapping\_layer\_output\_16\*0.94898) + (demapping\_layer\_output\_17\*-1.40094) + (demapping\_layer\_output\_18\*0.620947) + (demapping\_layer\_output\_19\*-1.43164) + (demapping\_layer\_output\_20\*-0.521707) + (demapping\_layer\_output\_21\*0.425528) + (demapping\_layer\_output\_22\*-0.924648) + (demapping\_layer\_output\_23\*0.315998) + (demapping\_layer\_output\_24\*-0.552469) );

output\_layer\_output\_156 = logistic( -1.32229 + (demapping\_layer\_output\_0\*-0.166715) + (demapping\_layer\_output\_1\*-0.0869929) + (demapping\_layer\_output\_2\*-1.74123) + (demapping\_layer\_output\_3\*-0.395401) + (demapping\_layer\_output\_4\*0.823296) + (demapping\_layer\_output\_5\*-0.90838) + (demapping\_layer\_output\_6\*0.708993) + (demapping\_layer\_output\_7\*-1.14717) + (demapping\_layer\_output\_8\*-0.305353) + (demapping\_layer\_output\_9\*-1.12212) + (demapping\_layer\_output\_10\*-1.03519) + (demapping\_layer\_output\_11\*-1.29784) + (demapping\_layer\_output\_12\*-1.09885) + (demapping\_layer\_output\_13\*-0.442315) + (demapping\_layer\_output\_14\*-0.942444) + (demapping\_layer\_output\_15\*-1.56273) + (demapping\_layer\_output\_16\*1.44104) + (demapping\_layer\_output\_17\*-0.239489) + (demapping\_layer\_output\_18\*-0.451195) + (demapping\_layer\_output\_19\*-1.90412) + (demapping\_layer\_output\_20\*-0.172524) + (demapping\_layer\_output\_21\*-1.66524) + (demapping\_layer\_output\_22\*-1.04595) + (demapping\_layer\_output\_23\*-0.0546036) + (demapping\_layer\_output\_24\*0.167477) );

output\_layer\_output\_157 = logistic( -0.572207 + (demapping\_layer\_output\_0\*-1.26771) + (demapping\_layer\_output\_1\*4.84367) + (demapping\_layer\_output\_2\*6.9408) + (demapping\_layer\_output\_3\*1.55309) + (demapping\_layer\_output\_4\*2.4109) + (demapping\_layer\_output\_5\*-0.723017) + (demapping\_layer\_output\_6\*-0.944986) + (demapping\_layer\_output\_7\*0.0024036) + (demapping\_layer\_output\_8\*6.27225) + (demapping\_layer\_output\_9\*-2.18743) + (demapping\_layer\_output\_10\*-1.21842) + (demapping\_layer\_output\_11\*2.18809) + (demapping\_layer\_output\_12\*-2.14289) + (demapping\_layer\_output\_13\*-2.30458) + (demapping\_layer\_output\_14\*0.411189) + (demapping\_layer\_output\_15\*-0.524412) + (demapping\_layer\_output\_16\*0.0846524) + (demapping\_layer\_output\_17\*6.24738) + (demapping\_layer\_output\_18\*-0.465034) + (demapping\_layer\_output\_19\*-0.568852) + (demapping\_layer\_output\_20\*-1.81099) + (demapping\_layer\_output\_21\*-0.075891) + (demapping\_layer\_output\_22\*-0.300141) + (demapping\_layer\_output\_23\*-1.81403) + (demapping\_layer\_output\_24\*-1.49235) );

output\_layer\_output\_158 = logistic( -2.14867 + (demapping\_layer\_output\_0\*-1.89472) + (demapping\_layer\_output\_1\*-2.66119) + (demapping\_layer\_output\_2\*0.991535) + (demapping\_layer\_output\_3\*-0.809467) + (demapping\_layer\_output\_4\*-0.616843) + (demapping\_layer\_output\_5\*0.869724) + (demapping\_layer\_output\_6\*0.827864) + (demapping\_layer\_output\_7\*1.76815) + (demapping\_layer\_output\_8\*0.432512) + (demapping\_layer\_output\_9\*-1.56644) + (demapping\_layer\_output\_10\*-1.53433) + (demapping\_layer\_output\_11\*-2.22965) + (demapping\_layer\_output\_12\*-2.44039) + (demapping\_layer\_output\_13\*-1.66808) + (demapping\_layer\_output\_14\*-1.3981) + (demapping\_layer\_output\_15\*0.863754) + (demapping\_layer\_output\_16\*0.24964) + (demapping\_layer\_output\_17\*0.398521) + (demapping\_layer\_output\_18\*1.40045) + (demapping\_layer\_output\_19\*-1.93493) + (demapping\_layer\_output\_20\*-0.623986) + (demapping\_layer\_output\_21\*-0.426983) + (demapping\_layer\_output\_22\*-1.18669) + (demapping\_layer\_output\_23\*-0.128563) + (demapping\_layer\_output\_24\*0.551286) );

output\_layer\_output\_159 = logistic( -1.15496 + (demapping\_layer\_output\_0\*-0.604686) + (demapping\_layer\_output\_1\*0.181372) + (demapping\_layer\_output\_2\*0.613346) + (demapping\_layer\_output\_3\*-0.688983) + (demapping\_layer\_output\_4\*0.342682) + (demapping\_layer\_output\_5\*0.495502) + (demapping\_layer\_output\_6\*-0.0926316) + (demapping\_layer\_output\_7\*-0.133306) + (demapping\_layer\_output\_8\*-0.578899) + (demapping\_layer\_output\_9\*0.712242) + (demapping\_layer\_output\_10\*0.0416311) + (demapping\_layer\_output\_11\*-0.214169) + (demapping\_layer\_output\_12\*0.365656) + (demapping\_layer\_output\_13\*-0.168557) + (demapping\_layer\_output\_14\*-0.907447) + (demapping\_layer\_output\_15\*0.307859) + (demapping\_layer\_output\_16\*-0.186288) + (demapping\_layer\_output\_17\*-0.466239) + (demapping\_layer\_output\_18\*0.677329) + (demapping\_layer\_output\_19\*-1.30801) + (demapping\_layer\_output\_20\*0.468303) + (demapping\_layer\_output\_21\*0.620986) + (demapping\_layer\_output\_22\*-1.31613) + (demapping\_layer\_output\_23\*-0.405239) + (demapping\_layer\_output\_24\*0.103158) );

output\_layer\_output\_160 = logistic( -0.938753 + (demapping\_layer\_output\_0\*-2.07434) + (demapping\_layer\_output\_1\*-0.857718) + (demapping\_layer\_output\_2\*2.02107) + (demapping\_layer\_output\_3\*-0.287578) + (demapping\_layer\_output\_4\*0.686599) + (demapping\_layer\_output\_5\*0.522338) + (demapping\_layer\_output\_6\*1.65343) + (demapping\_layer\_output\_7\*-0.922894) + (demapping\_layer\_output\_8\*-2.12223) + (demapping\_layer\_output\_9\*-1.16976) + (demapping\_layer\_output\_10\*-0.736283) + (demapping\_layer\_output\_11\*1.2127) + (demapping\_layer\_output\_12\*0.816712) + (demapping\_layer\_output\_13\*-0.963216) + (demapping\_layer\_output\_14\*-2.1022) + (demapping\_layer\_output\_15\*-0.328189) + (demapping\_layer\_output\_16\*3.08391) + (demapping\_layer\_output\_17\*-0.0199426) + (demapping\_layer\_output\_18\*-0.879292) + (demapping\_layer\_output\_19\*-1.2786) + (demapping\_layer\_output\_20\*-1.92226) + (demapping\_layer\_output\_21\*0.416856) + (demapping\_layer\_output\_22\*0.192203) + (demapping\_layer\_output\_23\*1.09736) + (demapping\_layer\_output\_24\*0.315659) );

output\_layer\_output\_161 = logistic( 0.0387208 + (demapping\_layer\_output\_0\*0.00537798) + (demapping\_layer\_output\_1\*-0.66431) + (demapping\_layer\_output\_2\*0.170162) + (demapping\_layer\_output\_3\*-0.491862) + (demapping\_layer\_output\_4\*0.0759832) + (demapping\_layer\_output\_5\*-1.00369) + (demapping\_layer\_output\_6\*0.0900967) + (demapping\_layer\_output\_7\*-1.0925) + (demapping\_layer\_output\_8\*-0.436596) + (demapping\_layer\_output\_9\*-0.127526) + (demapping\_layer\_output\_10\*-0.245319) + (demapping\_layer\_output\_11\*0.0299377) + (demapping\_layer\_output\_12\*-0.58319) + (demapping\_layer\_output\_13\*0.376927) + (demapping\_layer\_output\_14\*0.33006) + (demapping\_layer\_output\_15\*0.222618) + (demapping\_layer\_output\_16\*0.282609) + (demapping\_layer\_output\_17\*-0.134667) + (demapping\_layer\_output\_18\*-0.450197) + (demapping\_layer\_output\_19\*0.00833925) + (demapping\_layer\_output\_20\*-0.306371) + (demapping\_layer\_output\_21\*-0.158) + (demapping\_layer\_output\_22\*-0.255347) + (demapping\_layer\_output\_23\*0.064661) + (demapping\_layer\_output\_24\*0.100884) );

output\_layer\_output\_162 = logistic( -0.463108 + (demapping\_layer\_output\_0\*0.103541) + (demapping\_layer\_output\_1\*-3.4024) + (demapping\_layer\_output\_2\*3.82725) + (demapping\_layer\_output\_3\*-0.251355) + (demapping\_layer\_output\_4\*0.621181) + (demapping\_layer\_output\_5\*-2.40308) + (demapping\_layer\_output\_6\*1.0984) + (demapping\_layer\_output\_7\*-1.30231) + (demapping\_layer\_output\_8\*0.0640217) + (demapping\_layer\_output\_9\*1.4208) + (demapping\_layer\_output\_10\*-0.152797) + (demapping\_layer\_output\_11\*-0.256969) + (demapping\_layer\_output\_12\*-0.194906) + (demapping\_layer\_output\_13\*0.443693) + (demapping\_layer\_output\_14\*-0.626729) + (demapping\_layer\_output\_15\*-1.17608) + (demapping\_layer\_output\_16\*1.87529) + (demapping\_layer\_output\_17\*2.62053) + (demapping\_layer\_output\_18\*-0.939713) + (demapping\_layer\_output\_19\*-0.497424) + (demapping\_layer\_output\_20\*-0.726686) + (demapping\_layer\_output\_21\*-1.12237) + (demapping\_layer\_output\_22\*-0.666112) + (demapping\_layer\_output\_23\*-4.50556) + (demapping\_layer\_output\_24\*-2.91641) );

output\_layer\_output\_163 = logistic( -1.5155 + (demapping\_layer\_output\_0\*-0.33614) + (demapping\_layer\_output\_1\*0.588089) + (demapping\_layer\_output\_2\*1.05991) + (demapping\_layer\_output\_3\*-1.8709) + (demapping\_layer\_output\_4\*-2.79694) + (demapping\_layer\_output\_5\*-1.06663) + (demapping\_layer\_output\_6\*2.35511) + (demapping\_layer\_output\_7\*-1.75179) + (demapping\_layer\_output\_8\*-0.894291) + (demapping\_layer\_output\_9\*-0.56533) + (demapping\_layer\_output\_10\*-1.36685) + (demapping\_layer\_output\_11\*-1.23053) + (demapping\_layer\_output\_12\*-1.56043) + (demapping\_layer\_output\_13\*-1.5585) + (demapping\_layer\_output\_14\*-1.12779) + (demapping\_layer\_output\_15\*-0.316523) + (demapping\_layer\_output\_16\*1.75683) + (demapping\_layer\_output\_17\*-0.203285) + (demapping\_layer\_output\_18\*0.289381) + (demapping\_layer\_output\_19\*-2.02175) + (demapping\_layer\_output\_20\*-1.73682) + (demapping\_layer\_output\_21\*0.619166) + (demapping\_layer\_output\_22\*1.87717) + (demapping\_layer\_output\_23\*0.25239) + (demapping\_layer\_output\_24\*0.406035) );

output\_layer\_output\_164 = logistic( -0.325425 + (demapping\_layer\_output\_0\*0.0729411) + (demapping\_layer\_output\_1\*-0.534339) + (demapping\_layer\_output\_2\*0.60639) + (demapping\_layer\_output\_3\*-0.748284) + (demapping\_layer\_output\_4\*0.38195) + (demapping\_layer\_output\_5\*-0.799382) + (demapping\_layer\_output\_6\*0.00704822) + (demapping\_layer\_output\_7\*0.275857) + (demapping\_layer\_output\_8\*-0.345397) + (demapping\_layer\_output\_9\*0.00701195) + (demapping\_layer\_output\_10\*-0.376773) + (demapping\_layer\_output\_11\*-0.282538) + (demapping\_layer\_output\_12\*-1.58212) + (demapping\_layer\_output\_13\*0.364385) + (demapping\_layer\_output\_14\*-0.352069) + (demapping\_layer\_output\_15\*0.153205) + (demapping\_layer\_output\_16\*-1.26853) + (demapping\_layer\_output\_17\*0.401692) + (demapping\_layer\_output\_18\*-0.396013) + (demapping\_layer\_output\_19\*-0.689272) + (demapping\_layer\_output\_20\*0.705743) + (demapping\_layer\_output\_21\*-0.179835) + (demapping\_layer\_output\_22\*-1.0757) + (demapping\_layer\_output\_23\*-0.363152) + (demapping\_layer\_output\_24\*-0.14394) );

output\_layer\_output\_165 = logistic( -2.18807 + (demapping\_layer\_output\_0\*-0.823047) + (demapping\_layer\_output\_1\*4.72354) + (demapping\_layer\_output\_2\*1.44477) + (demapping\_layer\_output\_3\*-1.63235) + (demapping\_layer\_output\_4\*-2.31452) + (demapping\_layer\_output\_5\*-2.06667) + (demapping\_layer\_output\_6\*0.172246) + (demapping\_layer\_output\_7\*-2.10955) + (demapping\_layer\_output\_8\*-4.67044) + (demapping\_layer\_output\_9\*-0.537913) + (demapping\_layer\_output\_10\*1.80678) + (demapping\_layer\_output\_11\*0.517486) + (demapping\_layer\_output\_12\*-1.89793) + (demapping\_layer\_output\_13\*0.897452) + (demapping\_layer\_output\_14\*-2.69318) + (demapping\_layer\_output\_15\*0.840875) + (demapping\_layer\_output\_16\*2.3521) + (demapping\_layer\_output\_17\*-7.7864) + (demapping\_layer\_output\_18\*4.11123) + (demapping\_layer\_output\_19\*-2.2006) + (demapping\_layer\_output\_20\*1.68995) + (demapping\_layer\_output\_21\*-1.45757) + (demapping\_layer\_output\_22\*-1.3604) + (demapping\_layer\_output\_23\*4.65768) + (demapping\_layer\_output\_24\*-0.337638) );

output\_layer\_output\_166 = logistic( -1.55475 + (demapping\_layer\_output\_0\*4.75538) + (demapping\_layer\_output\_1\*-0.408457) + (demapping\_layer\_output\_2\*4.24434) + (demapping\_layer\_output\_3\*-1.39561) + (demapping\_layer\_output\_4\*3.49247) + (demapping\_layer\_output\_5\*2.76588) + (demapping\_layer\_output\_6\*-0.241953) + (demapping\_layer\_output\_7\*-2.09377) + (demapping\_layer\_output\_8\*0.335506) + (demapping\_layer\_output\_9\*-10.5521) + (demapping\_layer\_output\_10\*-1.14201) + (demapping\_layer\_output\_11\*-2.32756) + (demapping\_layer\_output\_12\*2.17979) + (demapping\_layer\_output\_13\*-0.186403) + (demapping\_layer\_output\_14\*-0.826244) + (demapping\_layer\_output\_15\*-2.72185) + (demapping\_layer\_output\_16\*0.542575) + (demapping\_layer\_output\_17\*3.12594) + (demapping\_layer\_output\_18\*-0.40279) + (demapping\_layer\_output\_19\*-1.01774) + (demapping\_layer\_output\_20\*0.331015) + (demapping\_layer\_output\_21\*5.07889) + (demapping\_layer\_output\_22\*-1.45592) + (demapping\_layer\_output\_23\*0.0558491) + (demapping\_layer\_output\_24\*-0.626577) );

output\_layer\_output\_167 = logistic( -2.72944 + (demapping\_layer\_output\_0\*-4.18527) + (demapping\_layer\_output\_1\*-2.18556) + (demapping\_layer\_output\_2\*4.21501) + (demapping\_layer\_output\_3\*-1.99176) + (demapping\_layer\_output\_4\*1.47085) + (demapping\_layer\_output\_5\*-1.41342) + (demapping\_layer\_output\_6\*7.2041) + (demapping\_layer\_output\_7\*-0.654982) + (demapping\_layer\_output\_8\*-0.239419) + (demapping\_layer\_output\_9\*-2.02136) + (demapping\_layer\_output\_10\*-1.67861) + (demapping\_layer\_output\_11\*8.93803) + (demapping\_layer\_output\_12\*-0.79419) + (demapping\_layer\_output\_13\*-6.36631) + (demapping\_layer\_output\_14\*-1.31515) + (demapping\_layer\_output\_15\*1.52711) + (demapping\_layer\_output\_16\*3.83241) + (demapping\_layer\_output\_17\*-8.17008) + (demapping\_layer\_output\_18\*5.26969) + (demapping\_layer\_output\_19\*-2.98182) + (demapping\_layer\_output\_20\*0.0806215) + (demapping\_layer\_output\_21\*0.938188) + (demapping\_layer\_output\_22\*-2.48041) + (demapping\_layer\_output\_23\*0.444418) + (demapping\_layer\_output\_24\*7.87248) );

output\_layer\_output\_168 = logistic( -1.07385 + (demapping\_layer\_output\_0\*3.5913) + (demapping\_layer\_output\_1\*2.23047) + (demapping\_layer\_output\_2\*0.887113) + (demapping\_layer\_output\_3\*-0.153863) + (demapping\_layer\_output\_4\*-0.110419) + (demapping\_layer\_output\_5\*-0.0566677) + (demapping\_layer\_output\_6\*0.79105) + (demapping\_layer\_output\_7\*0.434833) + (demapping\_layer\_output\_8\*-0.156207) + (demapping\_layer\_output\_9\*-1.64812) + (demapping\_layer\_output\_10\*-0.685276) + (demapping\_layer\_output\_11\*1.67533) + (demapping\_layer\_output\_12\*-2.39148) + (demapping\_layer\_output\_13\*-1.35206) + (demapping\_layer\_output\_14\*-0.750323) + (demapping\_layer\_output\_15\*-0.111715) + (demapping\_layer\_output\_16\*3.25409) + (demapping\_layer\_output\_17\*-1.87891) + (demapping\_layer\_output\_18\*0.433324) + (demapping\_layer\_output\_19\*-1.45496) + (demapping\_layer\_output\_20\*-0.811281) + (demapping\_layer\_output\_21\*1.83163) + (demapping\_layer\_output\_22\*-1.03657) + (demapping\_layer\_output\_23\*0.36965) + (demapping\_layer\_output\_24\*0.925126) );

abrasive\_cleaner\_output = output\_layer\_output\_0;

arti\_f\_\_sweetener\_output = output\_layer\_output\_1;

baby\_cosmetics\_output = output\_layer\_output\_2;

baby\_food\_output = output\_layer\_output\_3;

bags\_output = output\_layer\_output\_4;

baking\_powder\_output = output\_layer\_output\_5;

bathroom\_cleaner\_output = output\_layer\_output\_6;

beef\_output = output\_layer\_output\_7;

berries\_output = output\_layer\_output\_8;

beverages\_output = output\_layer\_output\_9;

bottled\_beer\_output = output\_layer\_output\_10;

bottled\_water\_output = output\_layer\_output\_11;

brandy\_output = output\_layer\_output\_12;

brown\_bread\_output = output\_layer\_output\_13;

butter\_output = output\_layer\_output\_14;

butter\_milk\_output = output\_layer\_output\_15;

cake\_bar\_output = output\_layer\_output\_16;

candles\_output = output\_layer\_output\_17;

candy\_output = output\_layer\_output\_18;

canned\_beer\_output = output\_layer\_output\_19;

canned\_fish\_output = output\_layer\_output\_20;

canned\_fruit\_output = output\_layer\_output\_21;

canned\_vegetables\_output = output\_layer\_output\_22;

cat\_food\_output = output\_layer\_output\_23;

cereals\_output = output\_layer\_output\_24;

chewing\_gum\_output = output\_layer\_output\_25;

chicken\_output = output\_layer\_output\_26;

chocolate\_output = output\_layer\_output\_27;

chocolate\_marshmallow\_output = output\_layer\_output\_28;

citrus\_fruit\_output = output\_layer\_output\_29;

cleaner\_output = output\_layer\_output\_30;

cling\_film\_div\_bags\_output = output\_layer\_output\_31;

cocoa\_drinks\_output = output\_layer\_output\_32;

coffee\_output = output\_layer\_output\_33;

condensed\_milk\_output = output\_layer\_output\_34;

cooking\_chocolate\_output = output\_layer\_output\_35;

cookware\_output = output\_layer\_output\_36;

cream\_output = output\_layer\_output\_37;

cream\_cheese\_output = output\_layer\_output\_38;

curd\_output = output\_layer\_output\_39;

curd\_cheese\_output = output\_layer\_output\_40;

decalci\_fier\_output = output\_layer\_output\_41;

dental\_care\_output = output\_layer\_output\_42;

dessert\_output = output\_layer\_output\_43;

detergent\_output = output\_layer\_output\_44;

dish\_cleaner\_output = output\_layer\_output\_45;

dishes\_output = output\_layer\_output\_46;

dog\_food\_output = output\_layer\_output\_47;

domestic\_eggs\_output = output\_layer\_output\_48;

female\_sanitary\_products\_output = output\_layer\_output\_49;

finished\_products\_output = output\_layer\_output\_50;

fish\_output = output\_layer\_output\_51;

flour\_output = output\_layer\_output\_52;

flower\_\_seeds\_\_output = output\_layer\_output\_53;

flower\_soil\_div\_fertilizer\_output = output\_layer\_output\_54;

frankfurter\_output = output\_layer\_output\_55;

frozen\_chicken\_output = output\_layer\_output\_56;

frozen\_dessert\_output = output\_layer\_output\_57;

frozen\_fish\_output = output\_layer\_output\_58;

frozen\_fruits\_output = output\_layer\_output\_59;

frozen\_meals\_output = output\_layer\_output\_60;

frozen\_potato\_products\_output = output\_layer\_output\_61;

frozen\_vegetables\_output = output\_layer\_output\_62;

fruit\_div\_vegetable\_juice\_output = output\_layer\_output\_63;

grapes\_output = output\_layer\_output\_64;

hair\_spray\_output = output\_layer\_output\_65;

ham\_output = output\_layer\_output\_66;

hamburger\_meat\_output = output\_layer\_output\_67;

hard\_cheese\_output = output\_layer\_output\_68;

herbs\_output = output\_layer\_output\_69;

honey\_output = output\_layer\_output\_70;

house\_keeping\_products\_output = output\_layer\_output\_71;

hygiene\_articles\_output = output\_layer\_output\_72;

ice\_cream\_output = output\_layer\_output\_73;

instant\_coffee\_output = output\_layer\_output\_74;

Instant\_food\_products\_output = output\_layer\_output\_75;

jam\_output = output\_layer\_output\_76;

ketchup\_output = output\_layer\_output\_77;

kitchen\_towels\_output = output\_layer\_output\_78;

kitchen\_utensil\_output = output\_layer\_output\_79;

light\_bulbs\_output = output\_layer\_output\_80;

liqueur\_output = output\_layer\_output\_81;

liquor\_output = output\_layer\_output\_82;

liquor\_\_appetizer\_\_output = output\_layer\_output\_83;

liver\_loaf\_output = output\_layer\_output\_84;

long\_li\_fe\_bakery\_product\_output = output\_layer\_output\_85;

make\_up\_remover\_output = output\_layer\_output\_86;

male\_cosmetics\_output = output\_layer\_output\_87;

margarine\_output = output\_layer\_output\_88;

mayonnaise\_output = output\_layer\_output\_89;

meat\_output = output\_layer\_output\_90;

meat\_spreads\_output = output\_layer\_output\_91;

misc\_\_beverages\_output = output\_layer\_output\_92;

mustard\_output = output\_layer\_output\_93;

napkins\_output = output\_layer\_output\_94;

ne\_wspapers\_output = output\_layer\_output\_95;

nut\_snack\_output = output\_layer\_output\_96;

nuts\_div\_prunes\_output = output\_layer\_output\_97;

oil\_output = output\_layer\_output\_98;

onions\_output = output\_layer\_output\_99;

organic\_products\_output = output\_layer\_output\_100;

organic\_sausage\_output = output\_layer\_output\_101;

other\_vegetables\_output = output\_layer\_output\_102;

packaged\_fruit\_div\_vegetables\_output = output\_layer\_output\_103;

pasta\_output = output\_layer\_output\_104;

pastr\_y\_output = output\_layer\_output\_105;

pet\_care\_output = output\_layer\_output\_106;

photo\_div\_film\_output = output\_layer\_output\_107;

pickled\_vegetables\_output = output\_layer\_output\_108;

pip\_fruit\_output = output\_layer\_output\_109;

popcorn\_output = output\_layer\_output\_110;

pork\_output = output\_layer\_output\_111;

pot\_plants\_output = output\_layer\_output\_112;

potato\_products\_output = output\_layer\_output\_113;

preservation\_products\_output = output\_layer\_output\_114;

processed\_cheese\_output = output\_layer\_output\_115;

prosecco\_output = output\_layer\_output\_116;

pudding\_powder\_output = output\_layer\_output\_117;

ready\_soups\_output = output\_layer\_output\_118;

red\_div\_blush\_wine\_output = output\_layer\_output\_119;

rice\_output = output\_layer\_output\_120;

roll\_products\_output = output\_layer\_output\_121;

rolls\_div\_buns\_output = output\_layer\_output\_122;

root\_vegetables\_output = output\_layer\_output\_123;

rubbing\_alcohol\_output = output\_layer\_output\_124;

rum\_output = output\_layer\_output\_125;

salad\_dressing\_output = output\_layer\_output\_126;

salt\_output = output\_layer\_output\_127;

salty\_snack\_output = output\_layer\_output\_128;

sauces\_output = output\_layer\_output\_129;

sausage\_output = output\_layer\_output\_130;

seasonal\_products\_output = output\_layer\_output\_131;

semi\_res\_finished\_bread\_output = output\_layer\_output\_132;

shopping\_bags\_output = output\_layer\_output\_133;

skin\_care\_output = output\_layer\_output\_134;

sliced\_cheese\_output = output\_layer\_output\_135;

snack\_products\_output = output\_layer\_output\_136;

soap\_output = output\_layer\_output\_137;

soda\_output = output\_layer\_output\_138;

soft\_cheese\_output = output\_layer\_output\_139;

softener\_output = output\_layer\_output\_140;

sound\_storage\_medium\_output = output\_layer\_output\_141;

soups\_output = output\_layer\_output\_142;

sparkling\_wine\_output = output\_layer\_output\_143;

specialty\_bar\_output = output\_layer\_output\_144;

specialty\_cheese\_output = output\_layer\_output\_145;

specialty\_chocolate\_output = output\_layer\_output\_146;

specialty\_fat\_output = output\_layer\_output\_147;

specialty\_vegetables\_output = output\_layer\_output\_148;

spices\_output = output\_layer\_output\_149;

spread\_cheese\_output = output\_layer\_output\_150;

sugar\_output = output\_layer\_output\_151;

sweet\_spreads\_output = output\_layer\_output\_152;

syrup\_output = output\_layer\_output\_153;

tea\_output = output\_layer\_output\_154;

tidbits\_output = output\_layer\_output\_155;

toilet\_cleaner\_output = output\_layer\_output\_156;

tropical\_fruit\_output = output\_layer\_output\_157;

turkey\_output = output\_layer\_output\_158;

UHT\_res\_milk\_output = output\_layer\_output\_159;

vinegar\_output = output\_layer\_output\_160;

waffles\_output = output\_layer\_output\_161;

whipped\_div\_sour\_cream\_output = output\_layer\_output\_162;

whisky\_output = output\_layer\_output\_163;

white\_bread\_output = output\_layer\_output\_164;

white\_wine\_output = output\_layer\_output\_165;

whole\_milk\_output = output\_layer\_output\_166;

yogurt\_output = output\_layer\_output\_167;

zwieback\_output = output\_layer\_output\_168;

logistic(x){

return 1/(1+exp(-x))

}

At last, we can analyze an example of a customer's shopping cart to check, for example, what recommendations our system would make.

A shopping basket of a customer is made up of the following items:

* citrus fruit
* frozen meat
* newspaper
* other vegetables
* whole milk

Applying our model to that customer, the recommended products are the following:

* Instant food products
* yogurt
* buttermilk
* frozen fish
* red/blush wine
* pip fruit
* butter

## Conclusions

Machine learning and neural networks are used in market basket analysis (MBA) to identify relationships between products purchased together by customers. They have various applications in MBA, including product recomendation, sales forecasting, customer segmentation, fraud detection, pricing optimization, etc.

Overall, machine learning and neural networks have numerous applications in MBA, and their ability to analyze large datasets and identify complex patterns make them valuable tools for businesses looking to optimize their operations and improve their bottom line.

iv. Linear regression (simple)

# **What is Simple Linear Regression?**

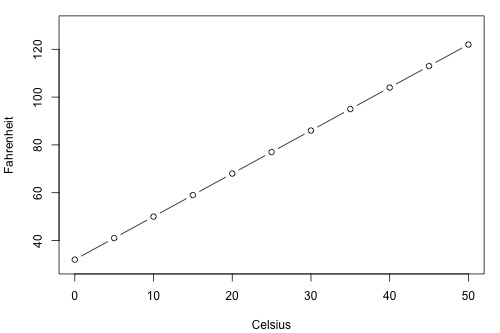
**Simple linear regression** is a statistical method that allows us to summarize and study relationships between two continuous (quantitative) variables:

* One variable, denoted x, is regarded as the **predictor**, **explanatory**, or **independent** variable.
* The other variable, denoted y, is regarded as the **response**, **outcome**, or **dependent** variable.

Because the other terms are used less frequently today, we'll use the "**predictor**" and "**response**" terms to refer to the variables encountered in this course. The other terms are mentioned only to make you aware of them should you encounter them. Simple linear regression gets its adjective "simple," because it concerns the study of only one predictor variable. In contrast, multiple linear regression, which we study later in this course, gets its adjective "multiple," because it concerns the study of two or more predictor variables.

### Types of relationships

Before proceeding, we must clarify what types of relationships we won't study in this course, namely, **deterministic** (or **functional**) **relationships**. Here is an example of a deterministic relationship.



Note that the observed (x, y) data points fall directly on a line. As you may remember, the relationship between degrees Fahrenheit and degrees Celsius is known to be:

F=95C+32F=95C+32

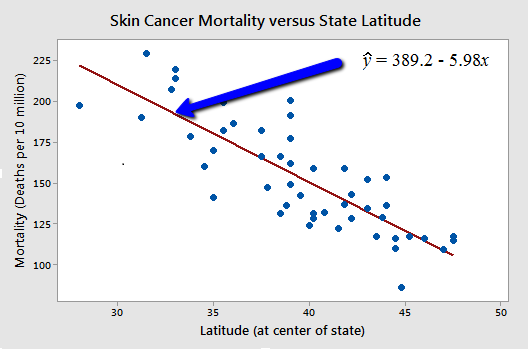
That is, if you know the temperature in degrees Celsius, you can use this equation to determine the temperature in degrees Fahrenheit exactly.

Here are some examples of other deterministic relationships that students from previous semesters have shared:

* Circumference = π × diameter
* Hooke's Law: Y = α + βX, where Y = amount of stretch in a spring, and X = applied weight.
* Ohm's Law: I = V/r, where V = voltage applied, r = resistance, and I = current.
* Boyle's Law: For a constant temperature, P = α/V, where P = pressure, α = constant for each gas, and V = volume of gas.

For each of these deterministic relationships, the equation exactly describes the relationship between the two variables. This course does not examine deterministic relationships. Instead, we are interested in **statistical relationships**, in which the relationship between the variables is not perfect.

Here is an example of a statistical relationship. The response variable y is the mortality due to skin cancer (number of deaths per 10 million people) and the predictor variable x is the latitude (degrees North) at the center of each of 49 states in the U.S. ([skincancer.txt](https://online.stat.psu.edu/stat462/sites/onlinecourses.science.psu.edu.stat462/files/data/skincancer/index.txt)) (The data were compiled in the 1950s, so Alaska and Hawaii were not yet states, and Washington, D.C. is included in the data set even though it is not technically a state.)



You might anticipate that if you lived in the higher latitudes of the northern U.S., the less exposed you'd be to the harmful rays of the sun, and therefore, the less risk you'd have of death due to skin cancer. The scatter plot supports such a hypothesis. There appears to be a negative linear relationship between latitude and mortality due to skin cancer, but the relationship is not perfect. Indeed, the plot exhibits some "**trend**," but it also exhibits some "**scatter**." Therefore, it is a statistical relationship, not a deterministic one.

Some other examples of statistical relationships might include:

* Height and weight — as height increases, you'd expect weight to increase, but not perfectly.
* Alcohol consumed and blood alcohol content — as alcohol consumption increases, you'd expect one's blood alcohol content to increase, but not perfectly.
* Vital lung capacity and pack-years of smoking — as amount of smoking increases (as quantified by the number of pack-years of smoking), you'd expect lung function (as quantified by vital lung capacity) to decrease, but not perfectly.
* Driving speed and gas mileage — as driving speed increases, you'd expect gas mileage to decrease, but not perfectly.

11. Make a comparison between:-

* 1. Generalization and abstraction
  2. Learning that is guided and unsupervised

The main difference between supervised vs unsupervised learning is the need for labelled training data. Supervised machine learning relies on labelled input and output training data, whereas unsupervised learning processes unlabelled or raw data. In supervised machine learning the model learns the relationship between the labelled input and output data. Models are finetuned until they can accurately predict the outcomes of unseen data. However, labelled training data will often be resource intensive to create. Unsupervised machine learning on the other hand learns from unlabelled raw training data. An unsupervised model will learn relationships and patterns within this unlabelled dataset, so is often used to discover inherent trends in a given dataset.

So overall, supervised and unsupervised machine learning are different in the approach to training and the data the model learns from. But as a result, they also differ in their final application and specific strengths. Supervised machine learning models are generally used to predict outcomes for unseen data. This could be predicting fluctuations in house prices or understanding the sentiment of a message.

Models are also used to classify unseen data against learned patterns. On the other hand, unsupervised machine learning techniques are generally used to understand patterns and trends within unlabelled data. This could be clustering data due to similarities or differences, or identifying underlying patterns within datasets. Unsupervised machine learning can be used to cluster customer data in marketing campaigns, or to detect anomalies and outliers.

The main differences of supervised vs unsupervised learning include:

* The need for labelled data in supervised machine learning.
* The problem the model is deployed to solve. Supervised machine learning is generally used to classify data or make predictions, whereas unsupervised learning is generally used to understand relationships within datasets.
* Supervised machine learning is much more resource-intensive because of the need for labelled data.
* In unsupervised machine learning it can be more difficult to reach adequate levels of explainability because of less human oversight.
  1. Regression and classification

|  |  |
| --- | --- |
| **Classification** | **Regressor** |
| **1.** | In this problem statement, the target variables are discrete. | In this problem statement, the target variables are continuous. |
| **2.** | Problems like [Spam Email Classification](https://www.geeksforgeeks.org/detecting-spam-emails-using-tensorflow-in-python/), [Disease prediction](https://www.geeksforgeeks.org/disease-prediction-using-machine-learning/) like problems are solved using Classification Algorithms. | Problems like [House Price Prediction](https://www.geeksforgeeks.org/house-price-prediction-using-machine-learning-in-python/), [Rainfall Prediction](https://www.geeksforgeeks.org/ml-rainfall-prediction-using-linear-regression/) like problems are solved using regression Algorithms. |
| **3.** | In this algorithm, we try to find the best possible decision boundary which can separate the two classes with the maximum possible separation. | In this algorithm, we try to find the best-fit line which can represent the overall trend in the data. |
| **4.** | [Evaluation metrics](https://www.geeksforgeeks.org/metrics-for-machine-learning-model/) like Precision, Recall, and F1-Score are used here to evaluate the performance of the classification algorithms. | Evaluation metrics like [Mean Squared Error,](https://www.geeksforgeeks.org/python-mean-squared-error/) [R2-Score](https://www.geeksforgeeks.org/ml-r-squared-in-regression-analysis/), and  [MAPE](https://www.geeksforgeeks.org/how-to-calculate-mape-in-python/) are used here to evaluate the performance of the regression algorithms. |
| **5.** | Here we face the problems like [binary Classification](https://www.geeksforgeeks.org/getting-started-with-classification/) or [Multi-Class Classification](https://www.geeksforgeeks.org/multiclass-classification-using-scikit-learn/) problems. | Here we face the problems like [Linear Regression](https://www.geeksforgeeks.org/ml-linear-regression/) models as well as non-linear models. |
| **6**. | Input Data are Independent variables and categorical dependent variable. | Input Data are Independent variables and continuous dependent variable. |
| **7**. | Output is Categorical labels. | Output is Continuous numerical values. |
| **8.** | Objective is to  Predict categorical/class labels. | Objective is to Predicting continuous numerical values. |
| **9**. | Example use cases are Spam detection, image recognition, sentiment analysis | Example use cases are Stock price prediction, house price prediction, demand forecasting. |