

1. Since we do not apply the activation function for our input vector, we can make a matrix of our weights and biases for the first layer:

```
theta1 =
    7    1    1    1
   -3   -8    1    2
    5  -10    1   -1

b1 =
   30   20    0  -10
```

Multiplying the input vector and the weights and adding the biases:

```
ans =
   115    10    25    35
```

Since none of these numbers are negative, this will be the vector which is passed into the weights and biases of our output layer:

```
theta2 =
    4    10
    2     0
    0    10
    1     0

b2 =
   10   50
```

Multiplying our input with these weights and adding the biases:

```
ans =
      525      1450
```

Thus, the output for our neural network with an input of  $x = [25, 10, -5]$  is  $[525, 1450]$  since none of the outputs are negative.