Assignment 5

Ameer Abdlrasul

2023-11-30

#Load dataset  
cereals <- read.csv("~/Downloads/Cereals.csv", header = TRUE, sep = ",")  
cereals.df<-cereals  
  
library(tidyverse)

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ dplyr 1.1.3 ✔ readr 2.1.4  
## ✔ forcats 1.0.0 ✔ stringr 1.5.0  
## ✔ ggplot2 3.4.4 ✔ tibble 3.2.1  
## ✔ lubridate 1.9.3 ✔ tidyr 1.3.0  
## ✔ purrr 1.0.2   
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()  
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(factoextra)

## Welcome! Want to learn more? See two factoextra-related books at https://goo.gl/ve3WBa

library(ISLR)  
library(cluster)

#Add row names  
row.names(cereals.df) <- cereals.df[,1]  
  
#Remove column with names  
cereals.df<-cereals.df[,-1]

#Remove missing values  
cereals.df<-na.omit(cereals.df)  
head(cereals.df)

## mfr type calories protein fat sodium fiber carbo  
## 100%\_Bran N C 70 4 1 130 10.0 5.0  
## 100%\_Natural\_Bran Q C 120 3 5 15 2.0 8.0  
## All-Bran K C 70 4 1 260 9.0 7.0  
## All-Bran\_with\_Extra\_Fiber K C 50 4 0 140 14.0 8.0  
## Apple\_Cinnamon\_Cheerios G C 110 2 2 180 1.5 10.5  
## Apple\_Jacks K C 110 2 0 125 1.0 11.0  
## sugars potass vitamins shelf weight cups rating  
## 100%\_Bran 6 280 25 3 1 0.33 68.40297  
## 100%\_Natural\_Bran 8 135 0 3 1 1.00 33.98368  
## All-Bran 5 320 25 3 1 0.33 59.42551  
## All-Bran\_with\_Extra\_Fiber 0 330 25 3 1 0.50 93.70491  
## Apple\_Cinnamon\_Cheerios 10 70 25 1 1 0.75 29.50954  
## Apple\_Jacks 14 30 25 2 1 1.00 33.17409

##One hot code categorical variables  
cereals.df$mfr\_A<-ifelse(cereals.df$mfr=="A","1", 0)  
cereals.df$mfr\_G<-ifelse(cereals.df$mfr=="G","1", 0)  
cereals.df$mfr\_K<-ifelse(cereals.df$mfr=="K","1", 0)  
cereals.df$mfr\_N<-ifelse(cereals.df$mfr=="N","1", 0)  
cereals.df$mfr\_P<-ifelse(cereals.df$mfr=="P","1", 0)  
cereals.df$mfr\_Q<-ifelse(cereals.df$mfr=="Q","1", 0)  
cereals.df$mfr\_R<-ifelse(cereals.df$mfr=="R","1", 0)  
  
cereals.df$type\_H<-ifelse(cereals.df$type=="H","1", 0)  
cereals.df$type\_C<-ifelse(cereals.df$type=="C","1", 0)  
  
cereals.df$shelf\_1<-ifelse(cereals.df$shelf==1,"1", 0)  
cereals.df$shelf\_2<-ifelse(cereals.df$shelf==2,"1", 0)  
cereals.df$shelf\_3<-ifelse(cereals.df$shelf==3,"1", 0)  
  
cereals.df.clean<-cereals.df[,-c(1, 2, 12)]  
  
#Remove missing values  
cereals.df.clean<-na.omit(cereals.df.clean)  
head(cereals.df.clean)

## calories protein fat sodium fiber carbo sugars potass  
## 100%\_Bran 70 4 1 130 10.0 5.0 6 280  
## 100%\_Natural\_Bran 120 3 5 15 2.0 8.0 8 135  
## All-Bran 70 4 1 260 9.0 7.0 5 320  
## All-Bran\_with\_Extra\_Fiber 50 4 0 140 14.0 8.0 0 330  
## Apple\_Cinnamon\_Cheerios 110 2 2 180 1.5 10.5 10 70  
## Apple\_Jacks 110 2 0 125 1.0 11.0 14 30  
## vitamins weight cups rating mfr\_A mfr\_G mfr\_K mfr\_N  
## 100%\_Bran 25 1 0.33 68.40297 0 0 0 1  
## 100%\_Natural\_Bran 0 1 1.00 33.98368 0 0 0 0  
## All-Bran 25 1 0.33 59.42551 0 0 1 0  
## All-Bran\_with\_Extra\_Fiber 25 1 0.50 93.70491 0 0 1 0  
## Apple\_Cinnamon\_Cheerios 25 1 0.75 29.50954 0 1 0 0  
## Apple\_Jacks 25 1 1.00 33.17409 0 0 1 0  
## mfr\_P mfr\_Q mfr\_R type\_H type\_C shelf\_1 shelf\_2  
## 100%\_Bran 0 0 0 0 1 0 0  
## 100%\_Natural\_Bran 0 1 0 0 1 0 0  
## All-Bran 0 0 0 0 1 0 0  
## All-Bran\_with\_Extra\_Fiber 0 0 0 0 1 0 0  
## Apple\_Cinnamon\_Cheerios 0 0 0 0 1 1 0  
## Apple\_Jacks 0 0 0 0 1 0 1  
## shelf\_3  
## 100%\_Bran 1  
## 100%\_Natural\_Bran 1  
## All-Bran 1  
## All-Bran\_with\_Extra\_Fiber 1  
## Apple\_Cinnamon\_Cheerios 0  
## Apple\_Jacks 0

row\_names\_save <- rownames(cereals.df.clean)

#Normalize quantitative values - exclude one hot coded variables  
  
scaled\_columns <- scale(cereals.df.clean[,c("calories", "protein", "fat", "sodium", "fiber","carbo", "sugars", "potass", "vitamins", "weight", "cups", "rating" )])  
  
cereals.df.clean[,c("calories", "protein", "fat", "sodium", "fiber","carbo", "sugars", "potass", "vitamins", "weight", "cups", "rating" )] <-scaled\_columns  
  
print(cereals.df.clean)

## calories protein fat  
## 100%\_Bran -1.8659155 1.3817478 0.0000000  
## 100%\_Natural\_Bran 0.6537514 0.4522084 3.9728810  
## All-Bran -1.8659155 1.3817478 0.0000000  
## All-Bran\_with\_Extra\_Fiber -2.8737823 1.3817478 -0.9932203  
## Apple\_Cinnamon\_Cheerios 0.1498180 -0.4773310 0.9932203  
## Apple\_Jacks 0.1498180 -0.4773310 -0.9932203  
## Basic\_4 1.1576848 0.4522084 0.9932203  
## Bran\_Chex -0.8580487 -0.4773310 0.0000000  
## Bran\_Flakes -0.8580487 0.4522084 -0.9932203  
## Cap'n'Crunch 0.6537514 -1.4068705 0.9932203  
## Cheerios 0.1498180 3.2408266 0.9932203  
## Cinnamon\_Toast\_Crunch 0.6537514 -1.4068705 1.9864405  
## Clusters 0.1498180 0.4522084 0.9932203  
## Cocoa\_Puffs 0.1498180 -1.4068705 0.0000000  
## Corn\_Chex 0.1498180 -0.4773310 -0.9932203  
## Corn\_Flakes -0.3541153 -0.4773310 -0.9932203  
## Corn\_Pops 0.1498180 -1.4068705 -0.9932203  
## Count\_Chocula 0.1498180 -1.4068705 0.0000000  
## Cracklin'\_Oat\_Bran 0.1498180 0.4522084 1.9864405  
## Crispix 0.1498180 -0.4773310 -0.9932203  
## Crispy\_Wheat\_&\_Raisins -0.3541153 -0.4773310 0.0000000  
## Double\_Chex -0.3541153 -0.4773310 -0.9932203  
## Froot\_Loops 0.1498180 -0.4773310 0.0000000  
## Frosted\_Flakes 0.1498180 -1.4068705 -0.9932203  
## Frosted\_Mini-Wheats -0.3541153 0.4522084 -0.9932203  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0.6537514 0.4522084 0.9932203  
## Fruitful\_Bran 0.6537514 0.4522084 -0.9932203  
## Fruity\_Pebbles 0.1498180 -1.4068705 0.0000000  
## Golden\_Crisp -0.3541153 -0.4773310 -0.9932203  
## Golden\_Grahams 0.1498180 -1.4068705 0.0000000  
## Grape\_Nuts\_Flakes -0.3541153 0.4522084 0.0000000  
## Grape-Nuts 0.1498180 0.4522084 -0.9932203  
## Great\_Grains\_Pecan 0.6537514 0.4522084 1.9864405  
## Honey\_Graham\_Ohs 0.6537514 -1.4068705 0.9932203  
## Honey\_Nut\_Cheerios 0.1498180 0.4522084 0.0000000  
## Honey-comb 0.1498180 -1.4068705 -0.9932203  
## Just\_Right\_Crunchy\_\_Nuggets 0.1498180 -0.4773310 0.0000000  
## Just\_Right\_Fruit\_&\_Nut 1.6616182 0.4522084 0.0000000  
## Kix 0.1498180 -0.4773310 0.0000000  
## Life -0.3541153 1.3817478 0.9932203  
## Lucky\_Charms 0.1498180 -0.4773310 0.0000000  
## Maypo -0.3541153 1.3817478 0.0000000  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 2.1655516 1.3817478 1.9864405  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 2.1655516 1.3817478 1.9864405  
## Mueslix\_Crispy\_Blend 2.6694849 0.4522084 0.9932203  
## Multi-Grain\_Cheerios -0.3541153 -0.4773310 0.0000000  
## Nut&Honey\_Crunch 0.6537514 -0.4773310 0.0000000  
## Nutri-Grain\_Almond-Raisin 1.6616182 0.4522084 0.9932203  
## Nutri-grain\_Wheat -0.8580487 0.4522084 -0.9932203  
## Oatmeal\_Raisin\_Crisp 1.1576848 0.4522084 0.9932203  
## Post\_Nat.\_Raisin\_Bran 0.6537514 0.4522084 0.0000000  
## Product\_19 -0.3541153 0.4522084 -0.9932203  
## Puffed\_Rice -2.8737823 -1.4068705 -0.9932203  
## Puffed\_Wheat -2.8737823 -0.4773310 -0.9932203  
## Quaker\_Oat\_Squares -0.3541153 1.3817478 0.0000000  
## Raisin\_Bran 0.6537514 0.4522084 0.0000000  
## Raisin\_Nut\_Bran -0.3541153 0.4522084 0.9932203  
## Raisin\_Squares -0.8580487 -0.4773310 -0.9932203  
## Rice\_Chex 0.1498180 -1.4068705 -0.9932203  
## Rice\_Krispies 0.1498180 -0.4773310 -0.9932203  
## Shredded\_Wheat -1.3619821 -0.4773310 -0.9932203  
## Shredded\_Wheat\_'n'Bran -0.8580487 0.4522084 -0.9932203  
## Shredded\_Wheat\_spoon\_size -0.8580487 0.4522084 -0.9932203  
## Smacks 0.1498180 -0.4773310 0.0000000  
## Special\_K 0.1498180 3.2408266 -0.9932203  
## Strawberry\_Fruit\_Wheats -0.8580487 -0.4773310 -0.9932203  
## Total\_Corn\_Flakes 0.1498180 -0.4773310 0.0000000  
## Total\_Raisin\_Bran 1.6616182 0.4522084 0.0000000  
## Total\_Whole\_Grain -0.3541153 0.4522084 0.0000000  
## Triples 0.1498180 -0.4773310 0.0000000  
## Trix 0.1498180 -1.4068705 0.0000000  
## Wheat\_Chex -0.3541153 0.4522084 0.0000000  
## Wheaties -0.3541153 0.4522084 0.0000000  
## Wheaties\_Honey\_Gold 0.1498180 -0.4773310 0.0000000  
## sodium fiber carbo  
## 100%\_Bran -0.39102269 3.22866747 -2.50013957  
## 100%\_Natural\_Bran -1.78041856 -0.07249167 -1.72926320  
## All-Bran 1.17959872 2.81602258 -1.98622199  
## All-Bran\_with\_Extra\_Fiber -0.27020566 4.87924705 -1.72926320  
## Apple\_Cinnamon\_Cheerios 0.21306247 -0.27881412 -1.08686623  
## Apple\_Jacks -0.45143121 -0.48513656 -0.95838683  
## Basic\_4 0.57551356 -0.07249167 0.84032469  
## Bran\_Chex 0.45469653 0.75279812 0.06944832  
## Bran\_Flakes 0.57551356 1.16544301 -0.44446926  
## Cap'n'Crunch 0.69633060 -0.89778146 -0.70142805  
## Cheerios 1.54204982 -0.07249167 0.58336590  
## Cinnamon\_Toast\_Crunch 0.57551356 -0.89778146 -0.44446926  
## Clusters -0.27020566 -0.07249167 -0.44446926  
## Cocoa\_Puffs 0.21306247 -0.89778146 -0.70142805  
## Corn\_Chex 1.42123279 -0.89778146 1.86815984  
## Corn\_Flakes 1.54204982 -0.48513656 1.61120105  
## Corn\_Pops -0.87429082 -0.48513656 -0.44446926  
## Count\_Chocula 0.21306247 -0.89778146 -0.70142805  
## Cracklin'\_Oat\_Bran -0.27020566 0.75279812 -1.21534562  
## Crispix 0.69633060 -0.48513656 1.61120105  
## Crispy\_Wheat\_&\_Raisins -0.27020566 -0.07249167 -0.95838683  
## Double\_Chex 0.33387950 -0.48513656 0.84032469  
## Froot\_Loops -0.45143121 -0.48513656 -0.95838683  
## Frosted\_Flakes 0.45469653 -0.48513656 -0.18751047  
## Frosted\_Mini-Wheats -1.96164410 0.34015322 -0.18751047  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats -0.02857160 1.16544301 -0.70142805  
## Fruitful\_Bran 0.93796466 1.16544301 -0.18751047  
## Fruity\_Pebbles -0.33061417 -0.89778146 -0.44446926  
## Golden\_Crisp -1.41796746 -0.89778146 -0.95838683  
## Golden\_Grahams 1.42123279 -0.89778146 0.06944832  
## Grape\_Nuts\_Flakes -0.27020566 0.34015322 0.06944832  
## Grape-Nuts 0.09224544 0.34015322 0.58336590  
## Great\_Grains\_Pecan -1.05551637 0.34015322 -0.44446926  
## Honey\_Graham\_Ohs 0.69633060 -0.48513656 -0.70142805  
## Honey\_Nut\_Cheerios 1.05878169 -0.27881412 -0.82990744  
## Honey-comb 0.21306247 -0.89778146 -0.18751047  
## Just\_Right\_Crunchy\_\_Nuggets 0.09224544 -0.48513656 0.58336590  
## Just\_Right\_Fruit\_&\_Nut 0.09224544 -0.07249167 1.35424227  
## Kix 1.17959872 -0.89778146 1.61120105  
## Life -0.14938863 -0.07249167 -0.70142805  
## Lucky\_Charms 0.21306247 -0.89778146 -0.70142805  
## Maypo -1.96164410 -0.89778146 0.32640711  
## Muesli\_Raisins,\_Dates,\_&\_Almonds -0.81388230 0.34015322 0.32640711  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans -0.14938863 0.34015322 0.32640711  
## Mueslix\_Crispy\_Blend -0.14938863 0.34015322 0.58336590  
## Multi-Grain\_Cheerios 0.69633060 -0.07249167 0.06944832  
## Nut&Honey\_Crunch 0.33387950 -0.89778146 0.06944832  
## Nutri-Grain\_Almond-Raisin 0.69633060 0.34015322 1.61120105  
## Nutri-grain\_Wheat 0.09224544 0.34015322 0.84032469  
## Oatmeal\_Raisin\_Crisp 0.09224544 -0.27881412 -0.31598986  
## Post\_Nat.\_Raisin\_Bran 0.45469653 1.57808790 -0.95838683  
## Product\_19 1.90450091 -0.48513656 1.35424227  
## Puffed\_Rice -1.96164410 -0.89778146 -0.44446926  
## Puffed\_Wheat -1.96164410 -0.48513656 -1.21534562  
## Quaker\_Oat\_Squares -0.33061417 -0.07249167 -0.18751047  
## Raisin\_Bran 0.57551356 1.16544301 -0.18751047  
## Raisin\_Nut\_Bran -0.27020566 0.13383078 -1.08686623  
## Raisin\_Squares -1.96164410 -0.07249167 0.06944832  
## Rice\_Chex 0.93796466 -0.89778146 2.12511863  
## Rice\_Krispies 1.54204982 -0.89778146 1.86815984  
## Shredded\_Wheat -1.96164410 0.34015322 0.32640711  
## Shredded\_Wheat\_'n'Bran -1.96164410 0.75279812 1.09728348  
## Shredded\_Wheat\_spoon\_size -1.96164410 0.34015322 1.35424227  
## Smacks -1.11592488 -0.48513656 -1.47230441  
## Special\_K 0.81714763 -0.48513656 0.32640711  
## Strawberry\_Fruit\_Wheats -1.78041856 0.34015322 0.06944832  
## Total\_Corn\_Flakes 0.45469653 -0.89778146 1.61120105  
## Total\_Raisin\_Bran 0.33387950 0.75279812 0.06944832  
## Total\_Whole\_Grain 0.45469653 0.34015322 0.32640711  
## Triples 1.05878169 -0.89778146 1.61120105  
## Trix -0.27020566 -0.89778146 -0.44446926  
## Wheat\_Chex 0.81714763 0.34015322 0.58336590  
## Wheaties 0.45469653 0.34015322 0.58336590  
## Wheaties\_Honey\_Gold 0.45469653 -0.48513656 0.32640711  
## sugars potass vitamins  
## 100%\_Bran -0.25420505 2.56052289 -0.1818422  
## 100%\_Natural\_Bran 0.20460407 0.51477378 -1.3032024  
## All-Bran -0.48360961 3.12486748 -0.1818422  
## All-Bran\_with\_Extra\_Fiber -1.63063240 3.26595362 -0.1818422  
## Apple\_Cinnamon\_Cheerios 0.66341318 -0.40228617 -0.1818422  
## Apple\_Jacks 1.58103142 -0.96663076 -0.1818422  
## Basic\_4 0.20460407 0.02097226 -0.1818422  
## Bran\_Chex -0.25420505 0.37368763 -0.1818422  
## Bran\_Flakes -0.48360961 1.29074758 -0.1818422  
## Cap'n'Crunch 1.12222230 -0.89608768 -0.1818422  
## Cheerios -1.40122785 0.09151534 -0.1818422  
## Cinnamon\_Toast\_Crunch 0.43400862 -0.75500154 -0.1818422  
## Clusters -0.02480049 0.09151534 -0.1818422  
## Cocoa\_Puffs 1.35162686 -0.61391539 -0.1818422  
## Corn\_Chex -0.94241873 -1.03717383 -0.1818422  
## Corn\_Flakes -1.17182329 -0.89608768 -0.1818422  
## Corn\_Pops 1.12222230 -1.10771690 -0.1818422  
## Count\_Chocula 1.35162686 -0.47282925 -0.1818422  
## Cracklin'\_Oat\_Bran -0.02480049 0.86748914 -0.1818422  
## Crispix -0.94241873 -0.96663076 -0.1818422  
## Crispy\_Wheat\_&\_Raisins 0.66341318 0.30314456 -0.1818422  
## Double\_Chex -0.48360961 -0.26120003 -0.1818422  
## Froot\_Loops 1.35162686 -0.96663076 -0.1818422  
## Frosted\_Flakes 0.89281774 -1.03717383 -0.1818422  
## Frosted\_Mini-Wheats -0.02480049 0.02097226 -0.1818422  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0.66341318 1.43183372 -0.1818422  
## Fruitful\_Bran 1.12222230 1.29074758 -0.1818422  
## Fruity\_Pebbles 1.12222230 -1.03717383 -0.1818422  
## Golden\_Crisp 1.81043598 -0.82554461 -0.1818422  
## Golden\_Grahams 0.43400862 -0.75500154 -0.1818422  
## Grape\_Nuts\_Flakes -0.48360961 -0.19065695 -0.1818422  
## Grape-Nuts -0.94241873 -0.12011388 -0.1818422  
## Great\_Grains\_Pecan -0.71301417 0.02097226 -0.1818422  
## Honey\_Graham\_Ohs 0.89281774 -0.75500154 -0.1818422  
## Honey\_Nut\_Cheerios 0.66341318 -0.12011388 -0.1818422  
## Honey-comb 0.89281774 -0.89608768 -0.1818422  
## Just\_Right\_Crunchy\_\_Nuggets -0.25420505 -0.54337232 3.1822385  
## Just\_Right\_Fruit\_&\_Nut 0.43400862 -0.04957081 3.1822385  
## Kix -0.94241873 -0.82554461 -0.1818422  
## Life -0.25420505 -0.04957081 -0.1818422  
## Lucky\_Charms 1.12222230 -0.61391539 -0.1818422  
## Maypo -0.94241873 -0.04957081 -0.1818422  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 0.89281774 1.00857529 -0.1818422  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0.89281774 1.00857529 -0.1818422  
## Mueslix\_Crispy\_Blend 1.35162686 0.86748914 -0.1818422  
## Multi-Grain\_Cheerios -0.25420505 -0.12011388 -0.1818422  
## Nut&Honey\_Crunch 0.43400862 -0.82554461 -0.1818422  
## Nutri-Grain\_Almond-Raisin -0.02480049 0.44423070 -0.1818422  
## Nutri-grain\_Wheat -1.17182329 -0.12011388 -0.1818422  
## Oatmeal\_Raisin\_Crisp 0.66341318 0.30314456 -0.1818422  
## Post\_Nat.\_Raisin\_Bran 1.58103142 2.27835060 -0.1818422  
## Product\_19 -0.94241873 -0.75500154 3.1822385  
## Puffed\_Rice -1.63063240 -1.17825998 -1.3032024  
## Puffed\_Wheat -1.63063240 -0.68445846 -1.3032024  
## Quaker\_Oat\_Squares -0.25420505 0.16205841 -0.1818422  
## Raisin\_Bran 1.12222230 1.99617831 -0.1818422  
## Raisin\_Nut\_Bran 0.20460407 0.58531685 -0.1818422  
## Raisin\_Squares -0.25420505 0.16205841 -0.1818422  
## Rice\_Chex -1.17182329 -0.96663076 -0.1818422  
## Rice\_Krispies -0.94241873 -0.89608768 -0.1818422  
## Shredded\_Wheat -1.63063240 -0.04957081 -1.3032024  
## Shredded\_Wheat\_'n'Bran -1.63063240 0.58531685 -1.3032024  
## Shredded\_Wheat\_spoon\_size -1.63063240 0.30314456 -1.3032024  
## Smacks 1.81043598 -0.82554461 -0.1818422  
## Special\_K -0.94241873 -0.61391539 -0.1818422  
## Strawberry\_Fruit\_Wheats -0.48360961 -0.12011388 -0.1818422  
## Total\_Corn\_Flakes -0.94241873 -0.89608768 3.1822385  
## Total\_Raisin\_Bran 1.58103142 1.85509216 3.1822385  
## Total\_Whole\_Grain -0.94241873 0.16205841 3.1822385  
## Triples -0.94241873 -0.54337232 -0.1818422  
## Trix 1.12222230 -1.03717383 -0.1818422  
## Wheat\_Chex -0.94241873 0.23260148 -0.1818422  
## Wheaties -0.94241873 0.16205841 -0.1818422  
## Wheaties\_Honey\_Gold 0.20460407 -0.54337232 -0.1818422  
## weight cups rating mfr\_A  
## 100%\_Bran -0.2008324 -2.08565823 1.85490376 0  
## 100%\_Natural\_Bran -0.2008324 0.75675340 -0.59771126 0  
## All-Bran -0.2008324 -2.08565823 1.21519648 0  
## All-Bran\_with\_Extra\_Fiber -0.2008324 -1.36444931 3.65784358 0  
## Apple\_Cinnamon\_Cheerios -0.2008324 -0.30384795 -0.91652483 0  
## Apple\_Jacks -0.2008324 0.75675340 -0.65539984 0  
## Basic\_4 1.9501886 -0.30384795 -0.38002951 0  
## Bran\_Chex -0.2008324 -0.64324039 0.48087533 0  
## Bran\_Flakes -0.2008324 -0.64324039 0.77969576 0  
## Cap'n'Crunch -0.2008324 -0.30384795 -1.73360655 0  
## Cheerios -0.2008324 1.81735475 0.59807496 0  
## Cinnamon\_Toast\_Crunch -0.2008324 -0.30384795 -1.60671768 0  
## Clusters -0.2008324 -1.36444931 -0.14048876 0  
## Cocoa\_Puffs -0.2008324 0.75675340 -1.39915514 0  
## Corn\_Chex -0.2008324 0.75675340 -0.06603869 0  
## Corn\_Flakes -0.2008324 0.75675340 0.24879639 0  
## Corn\_Pops -0.2008324 0.75675340 -0.46951197 0  
## Count\_Chocula -0.2008324 0.75675340 -1.42337774 0  
## Cracklin'\_Oat\_Bran -0.2008324 -1.36444931 -0.13702824 0  
## Crispix -0.2008324 0.75675340 0.32235640 0  
## Crispy\_Wheat\_&\_Raisins -0.2008324 -0.30384795 -0.44147911 0  
## Double\_Chex -0.2008324 -0.30384795 0.13959735 0  
## Froot\_Loops -0.2008324 0.75675340 -0.72427057 0  
## Frosted\_Flakes -0.2008324 -0.30384795 -0.77925310 0  
## Frosted\_Mini-Wheats -0.2008324 -0.09172768 1.13821301 0  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 1.4287290 -0.64324039 -0.10366038 0  
## Fruitful\_Bran 1.9501886 -0.64324039 -0.09664548 0  
## Fruity\_Pebbles -0.2008324 -0.30384795 -1.02225423 0  
## Golden\_Crisp -0.2008324 0.24766475 -0.50730289 0  
## Golden\_Grahams -0.2008324 -0.30384795 -1.32308140 0  
## Grape\_Nuts\_Flakes -0.2008324 0.24766475 0.69155685 0  
## Grape-Nuts -0.2008324 -2.42505066 0.78377123 0  
## Great\_Grains\_Pecan -0.2008324 -2.08565823 0.24511896 0  
## Honey\_Graham\_Ohs -0.2008324 0.75675340 -1.46080340 0  
## Honey\_Nut\_Cheerios -0.2008324 -0.30384795 -0.80517325 0  
## Honey-comb -0.2008324 2.15674718 -0.97118798 0  
## Just\_Right\_Crunchy\_\_Nuggets -0.2008324 0.75675340 -0.41671824 0  
## Just\_Right\_Fruit\_&\_Nut 1.7546413 -0.30384795 -0.42043579 0  
## Kix -0.2008324 2.87795610 -0.22308231 0  
## Life -0.2008324 -0.64324039 0.21065609 0  
## Lucky\_Charms -0.2008324 0.75675340 -1.11426481 0  
## Maypo -0.2008324 0.75675340 0.88922515 1  
## Muesli\_Raisins,\_Dates,\_&\_Almonds -0.2008324 0.75675340 -0.37302488 0  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans -0.2008324 0.75675340 -0.58658904 0  
## Mueslix\_Crispy\_Blend 3.0582904 -0.64324039 -0.85924775 0  
## Multi-Grain\_Cheerios -0.2008324 0.75675340 -0.16145563 0  
## Nut&Honey\_Crunch -0.2008324 -0.64324039 -0.88697142 0  
## Nutri-Grain\_Almond-Raisin 1.9501886 -0.64324039 -0.11967375 0  
## Nutri-grain\_Wheat -0.2008324 0.75675340 1.23068291 0  
## Oatmeal\_Raisin\_Crisp 1.4287290 -1.36444931 -0.84945049 0  
## Post\_Nat.\_Raisin\_Bran 1.9501886 -0.64324039 -0.32287913 0  
## Product\_19 -0.2008324 0.75675340 -0.06186866 0  
## Puffed\_Rice -3.4599552 0.75675340 1.31001152 0  
## Puffed\_Wheat -3.4599552 0.75675340 1.47030646 0  
## Quaker\_Oat\_Squares -0.2008324 -1.36444931 0.50878106 0  
## Raisin\_Bran 1.9501886 -0.30384795 -0.22179377 0  
## Raisin\_Nut\_Bran -0.2008324 -1.36444931 -0.19014120 0  
## Raisin\_Squares -0.2008324 -1.36444931 0.92358705 0  
## Rice\_Chex -0.2008324 1.30826610 -0.02656845 0  
## Rice\_Krispies -0.2008324 0.75675340 -0.12909114 0  
## Shredded\_Wheat -1.3089342 0.75675340 1.84299757 0  
## Shredded\_Wheat\_'n'Bran -0.2008324 -0.64324039 2.28743193 0  
## Shredded\_Wheat\_spoon\_size -0.2008324 -0.64324039 2.16834997 0  
## Smacks -0.2008324 -0.30384795 -0.79392626 0  
## Special\_K -0.2008324 0.75675340 0.76669214 0  
## Strawberry\_Fruit\_Wheats -0.2008324 0.75675340 1.21081332 0  
## Total\_Corn\_Flakes -0.2008324 0.75675340 -0.25168258 0  
## Total\_Raisin\_Bran 3.0582904 0.75675340 -0.98185009 0  
## Total\_Whole\_Grain -0.2008324 0.75675340 0.30548275 0  
## Triples -0.2008324 -0.30384795 -0.23269772 0  
## Trix -0.2008324 0.75675340 -1.04166919 0  
## Wheat\_Chex -0.2008324 -0.64324039 0.52841741 0  
## Wheaties -0.2008324 0.75675340 0.65701831 0  
## Wheaties\_Honey\_Gold -0.2008324 -0.30384795 -0.44066942 0  
## mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R  
## 100%\_Bran 0 0 1 0 0 0  
## 100%\_Natural\_Bran 0 0 0 0 1 0  
## All-Bran 0 1 0 0 0 0  
## All-Bran\_with\_Extra\_Fiber 0 1 0 0 0 0  
## Apple\_Cinnamon\_Cheerios 1 0 0 0 0 0  
## Apple\_Jacks 0 1 0 0 0 0  
## Basic\_4 1 0 0 0 0 0  
## Bran\_Chex 0 0 0 0 0 1  
## Bran\_Flakes 0 0 0 1 0 0  
## Cap'n'Crunch 0 0 0 0 1 0  
## Cheerios 1 0 0 0 0 0  
## Cinnamon\_Toast\_Crunch 1 0 0 0 0 0  
## Clusters 1 0 0 0 0 0  
## Cocoa\_Puffs 1 0 0 0 0 0  
## Corn\_Chex 0 0 0 0 0 1  
## Corn\_Flakes 0 1 0 0 0 0  
## Corn\_Pops 0 1 0 0 0 0  
## Count\_Chocula 1 0 0 0 0 0  
## Cracklin'\_Oat\_Bran 0 1 0 0 0 0  
## Crispix 0 1 0 0 0 0  
## Crispy\_Wheat\_&\_Raisins 1 0 0 0 0 0  
## Double\_Chex 0 0 0 0 0 1  
## Froot\_Loops 0 1 0 0 0 0  
## Frosted\_Flakes 0 1 0 0 0 0  
## Frosted\_Mini-Wheats 0 1 0 0 0 0  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0 0 0 1 0 0  
## Fruitful\_Bran 0 1 0 0 0 0  
## Fruity\_Pebbles 0 0 0 1 0 0  
## Golden\_Crisp 0 0 0 1 0 0  
## Golden\_Grahams 1 0 0 0 0 0  
## Grape\_Nuts\_Flakes 0 0 0 1 0 0  
## Grape-Nuts 0 0 0 1 0 0  
## Great\_Grains\_Pecan 0 0 0 1 0 0  
## Honey\_Graham\_Ohs 0 0 0 0 1 0  
## Honey\_Nut\_Cheerios 1 0 0 0 0 0  
## Honey-comb 0 0 0 1 0 0  
## Just\_Right\_Crunchy\_\_Nuggets 0 1 0 0 0 0  
## Just\_Right\_Fruit\_&\_Nut 0 1 0 0 0 0  
## Kix 1 0 0 0 0 0  
## Life 0 0 0 0 1 0  
## Lucky\_Charms 1 0 0 0 0 0  
## Maypo 0 0 0 0 0 0  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 0 0 0 0 0 1  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0 0 0 0 0 1  
## Mueslix\_Crispy\_Blend 0 1 0 0 0 0  
## Multi-Grain\_Cheerios 1 0 0 0 0 0  
## Nut&Honey\_Crunch 0 1 0 0 0 0  
## Nutri-Grain\_Almond-Raisin 0 1 0 0 0 0  
## Nutri-grain\_Wheat 0 1 0 0 0 0  
## Oatmeal\_Raisin\_Crisp 1 0 0 0 0 0  
## Post\_Nat.\_Raisin\_Bran 0 0 0 1 0 0  
## Product\_19 0 1 0 0 0 0  
## Puffed\_Rice 0 0 0 0 1 0  
## Puffed\_Wheat 0 0 0 0 1 0  
## Quaker\_Oat\_Squares 0 0 0 0 1 0  
## Raisin\_Bran 0 1 0 0 0 0  
## Raisin\_Nut\_Bran 1 0 0 0 0 0  
## Raisin\_Squares 0 1 0 0 0 0  
## Rice\_Chex 0 0 0 0 0 1  
## Rice\_Krispies 0 1 0 0 0 0  
## Shredded\_Wheat 0 0 1 0 0 0  
## Shredded\_Wheat\_'n'Bran 0 0 1 0 0 0  
## Shredded\_Wheat\_spoon\_size 0 0 1 0 0 0  
## Smacks 0 1 0 0 0 0  
## Special\_K 0 1 0 0 0 0  
## Strawberry\_Fruit\_Wheats 0 0 1 0 0 0  
## Total\_Corn\_Flakes 1 0 0 0 0 0  
## Total\_Raisin\_Bran 1 0 0 0 0 0  
## Total\_Whole\_Grain 1 0 0 0 0 0  
## Triples 1 0 0 0 0 0  
## Trix 1 0 0 0 0 0  
## Wheat\_Chex 0 0 0 0 0 1  
## Wheaties 1 0 0 0 0 0  
## Wheaties\_Honey\_Gold 1 0 0 0 0 0  
## type\_H type\_C shelf\_1 shelf\_2 shelf\_3  
## 100%\_Bran 0 1 0 0 1  
## 100%\_Natural\_Bran 0 1 0 0 1  
## All-Bran 0 1 0 0 1  
## All-Bran\_with\_Extra\_Fiber 0 1 0 0 1  
## Apple\_Cinnamon\_Cheerios 0 1 1 0 0  
## Apple\_Jacks 0 1 0 1 0  
## Basic\_4 0 1 0 0 1  
## Bran\_Chex 0 1 1 0 0  
## Bran\_Flakes 0 1 0 0 1  
## Cap'n'Crunch 0 1 0 1 0  
## Cheerios 0 1 1 0 0  
## Cinnamon\_Toast\_Crunch 0 1 0 1 0  
## Clusters 0 1 0 0 1  
## Cocoa\_Puffs 0 1 0 1 0  
## Corn\_Chex 0 1 1 0 0  
## Corn\_Flakes 0 1 1 0 0  
## Corn\_Pops 0 1 0 1 0  
## Count\_Chocula 0 1 0 1 0  
## Cracklin'\_Oat\_Bran 0 1 0 0 1  
## Crispix 0 1 0 0 1  
## Crispy\_Wheat\_&\_Raisins 0 1 0 0 1  
## Double\_Chex 0 1 0 0 1  
## Froot\_Loops 0 1 0 1 0  
## Frosted\_Flakes 0 1 1 0 0  
## Frosted\_Mini-Wheats 0 1 0 1 0  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0 1 0 0 1  
## Fruitful\_Bran 0 1 0 0 1  
## Fruity\_Pebbles 0 1 0 1 0  
## Golden\_Crisp 0 1 1 0 0  
## Golden\_Grahams 0 1 0 1 0  
## Grape\_Nuts\_Flakes 0 1 0 0 1  
## Grape-Nuts 0 1 0 0 1  
## Great\_Grains\_Pecan 0 1 0 0 1  
## Honey\_Graham\_Ohs 0 1 0 1 0  
## Honey\_Nut\_Cheerios 0 1 1 0 0  
## Honey-comb 0 1 1 0 0  
## Just\_Right\_Crunchy\_\_Nuggets 0 1 0 0 1  
## Just\_Right\_Fruit\_&\_Nut 0 1 0 0 1  
## Kix 0 1 0 1 0  
## Life 0 1 0 1 0  
## Lucky\_Charms 0 1 0 1 0  
## Maypo 1 0 0 1 0  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 0 1 0 0 1  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0 1 0 0 1  
## Mueslix\_Crispy\_Blend 0 1 0 0 1  
## Multi-Grain\_Cheerios 0 1 1 0 0  
## Nut&Honey\_Crunch 0 1 0 1 0  
## Nutri-Grain\_Almond-Raisin 0 1 0 0 1  
## Nutri-grain\_Wheat 0 1 0 0 1  
## Oatmeal\_Raisin\_Crisp 0 1 0 0 1  
## Post\_Nat.\_Raisin\_Bran 0 1 0 0 1  
## Product\_19 0 1 0 0 1  
## Puffed\_Rice 0 1 0 0 1  
## Puffed\_Wheat 0 1 0 0 1  
## Quaker\_Oat\_Squares 0 1 0 0 1  
## Raisin\_Bran 0 1 0 1 0  
## Raisin\_Nut\_Bran 0 1 0 0 1  
## Raisin\_Squares 0 1 0 0 1  
## Rice\_Chex 0 1 1 0 0  
## Rice\_Krispies 0 1 1 0 0  
## Shredded\_Wheat 0 1 1 0 0  
## Shredded\_Wheat\_'n'Bran 0 1 1 0 0  
## Shredded\_Wheat\_spoon\_size 0 1 1 0 0  
## Smacks 0 1 0 1 0  
## Special\_K 0 1 1 0 0  
## Strawberry\_Fruit\_Wheats 0 1 0 1 0  
## Total\_Corn\_Flakes 0 1 0 0 1  
## Total\_Raisin\_Bran 0 1 0 0 1  
## Total\_Whole\_Grain 0 1 0 0 1  
## Triples 0 1 0 0 1  
## Trix 0 1 0 1 0  
## Wheat\_Chex 0 1 1 0 0  
## Wheaties 0 1 1 0 0  
## Wheaties\_Honey\_Gold 0 1 1 0 0

cereals.df.clean <- as.data.frame(lapply(cereals.df.clean, as.numeric))  
column\_types <- sapply(cereals.df.clean, class)  
print(column\_types)

## calories protein fat sodium fiber carbo sugars potass   
## "numeric" "numeric" "numeric" "numeric" "numeric" "numeric" "numeric" "numeric"   
## vitamins weight cups rating mfr\_A mfr\_G mfr\_K mfr\_N   
## "numeric" "numeric" "numeric" "numeric" "numeric" "numeric" "numeric" "numeric"   
## mfr\_P mfr\_Q mfr\_R type\_H type\_C shelf\_1 shelf\_2 shelf\_3   
## "numeric" "numeric" "numeric" "numeric" "numeric" "numeric" "numeric" "numeric"

rownames(cereals.df.clean) <- row\_names\_save  
print(cereals.df.clean)

## calories protein fat  
## 100%\_Bran -1.8659155 1.3817478 0.0000000  
## 100%\_Natural\_Bran 0.6537514 0.4522084 3.9728810  
## All-Bran -1.8659155 1.3817478 0.0000000  
## All-Bran\_with\_Extra\_Fiber -2.8737823 1.3817478 -0.9932203  
## Apple\_Cinnamon\_Cheerios 0.1498180 -0.4773310 0.9932203  
## Apple\_Jacks 0.1498180 -0.4773310 -0.9932203  
## Basic\_4 1.1576848 0.4522084 0.9932203  
## Bran\_Chex -0.8580487 -0.4773310 0.0000000  
## Bran\_Flakes -0.8580487 0.4522084 -0.9932203  
## Cap'n'Crunch 0.6537514 -1.4068705 0.9932203  
## Cheerios 0.1498180 3.2408266 0.9932203  
## Cinnamon\_Toast\_Crunch 0.6537514 -1.4068705 1.9864405  
## Clusters 0.1498180 0.4522084 0.9932203  
## Cocoa\_Puffs 0.1498180 -1.4068705 0.0000000  
## Corn\_Chex 0.1498180 -0.4773310 -0.9932203  
## Corn\_Flakes -0.3541153 -0.4773310 -0.9932203  
## Corn\_Pops 0.1498180 -1.4068705 -0.9932203  
## Count\_Chocula 0.1498180 -1.4068705 0.0000000  
## Cracklin'\_Oat\_Bran 0.1498180 0.4522084 1.9864405  
## Crispix 0.1498180 -0.4773310 -0.9932203  
## Crispy\_Wheat\_&\_Raisins -0.3541153 -0.4773310 0.0000000  
## Double\_Chex -0.3541153 -0.4773310 -0.9932203  
## Froot\_Loops 0.1498180 -0.4773310 0.0000000  
## Frosted\_Flakes 0.1498180 -1.4068705 -0.9932203  
## Frosted\_Mini-Wheats -0.3541153 0.4522084 -0.9932203  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0.6537514 0.4522084 0.9932203  
## Fruitful\_Bran 0.6537514 0.4522084 -0.9932203  
## Fruity\_Pebbles 0.1498180 -1.4068705 0.0000000  
## Golden\_Crisp -0.3541153 -0.4773310 -0.9932203  
## Golden\_Grahams 0.1498180 -1.4068705 0.0000000  
## Grape\_Nuts\_Flakes -0.3541153 0.4522084 0.0000000  
## Grape-Nuts 0.1498180 0.4522084 -0.9932203  
## Great\_Grains\_Pecan 0.6537514 0.4522084 1.9864405  
## Honey\_Graham\_Ohs 0.6537514 -1.4068705 0.9932203  
## Honey\_Nut\_Cheerios 0.1498180 0.4522084 0.0000000  
## Honey-comb 0.1498180 -1.4068705 -0.9932203  
## Just\_Right\_Crunchy\_\_Nuggets 0.1498180 -0.4773310 0.0000000  
## Just\_Right\_Fruit\_&\_Nut 1.6616182 0.4522084 0.0000000  
## Kix 0.1498180 -0.4773310 0.0000000  
## Life -0.3541153 1.3817478 0.9932203  
## Lucky\_Charms 0.1498180 -0.4773310 0.0000000  
## Maypo -0.3541153 1.3817478 0.0000000  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 2.1655516 1.3817478 1.9864405  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 2.1655516 1.3817478 1.9864405  
## Mueslix\_Crispy\_Blend 2.6694849 0.4522084 0.9932203  
## Multi-Grain\_Cheerios -0.3541153 -0.4773310 0.0000000  
## Nut&Honey\_Crunch 0.6537514 -0.4773310 0.0000000  
## Nutri-Grain\_Almond-Raisin 1.6616182 0.4522084 0.9932203  
## Nutri-grain\_Wheat -0.8580487 0.4522084 -0.9932203  
## Oatmeal\_Raisin\_Crisp 1.1576848 0.4522084 0.9932203  
## Post\_Nat.\_Raisin\_Bran 0.6537514 0.4522084 0.0000000  
## Product\_19 -0.3541153 0.4522084 -0.9932203  
## Puffed\_Rice -2.8737823 -1.4068705 -0.9932203  
## Puffed\_Wheat -2.8737823 -0.4773310 -0.9932203  
## Quaker\_Oat\_Squares -0.3541153 1.3817478 0.0000000  
## Raisin\_Bran 0.6537514 0.4522084 0.0000000  
## Raisin\_Nut\_Bran -0.3541153 0.4522084 0.9932203  
## Raisin\_Squares -0.8580487 -0.4773310 -0.9932203  
## Rice\_Chex 0.1498180 -1.4068705 -0.9932203  
## Rice\_Krispies 0.1498180 -0.4773310 -0.9932203  
## Shredded\_Wheat -1.3619821 -0.4773310 -0.9932203  
## Shredded\_Wheat\_'n'Bran -0.8580487 0.4522084 -0.9932203  
## Shredded\_Wheat\_spoon\_size -0.8580487 0.4522084 -0.9932203  
## Smacks 0.1498180 -0.4773310 0.0000000  
## Special\_K 0.1498180 3.2408266 -0.9932203  
## Strawberry\_Fruit\_Wheats -0.8580487 -0.4773310 -0.9932203  
## Total\_Corn\_Flakes 0.1498180 -0.4773310 0.0000000  
## Total\_Raisin\_Bran 1.6616182 0.4522084 0.0000000  
## Total\_Whole\_Grain -0.3541153 0.4522084 0.0000000  
## Triples 0.1498180 -0.4773310 0.0000000  
## Trix 0.1498180 -1.4068705 0.0000000  
## Wheat\_Chex -0.3541153 0.4522084 0.0000000  
## Wheaties -0.3541153 0.4522084 0.0000000  
## Wheaties\_Honey\_Gold 0.1498180 -0.4773310 0.0000000  
## sodium fiber carbo  
## 100%\_Bran -0.39102269 3.22866747 -2.50013957  
## 100%\_Natural\_Bran -1.78041856 -0.07249167 -1.72926320  
## All-Bran 1.17959872 2.81602258 -1.98622199  
## All-Bran\_with\_Extra\_Fiber -0.27020566 4.87924705 -1.72926320  
## Apple\_Cinnamon\_Cheerios 0.21306247 -0.27881412 -1.08686623  
## Apple\_Jacks -0.45143121 -0.48513656 -0.95838683  
## Basic\_4 0.57551356 -0.07249167 0.84032469  
## Bran\_Chex 0.45469653 0.75279812 0.06944832  
## Bran\_Flakes 0.57551356 1.16544301 -0.44446926  
## Cap'n'Crunch 0.69633060 -0.89778146 -0.70142805  
## Cheerios 1.54204982 -0.07249167 0.58336590  
## Cinnamon\_Toast\_Crunch 0.57551356 -0.89778146 -0.44446926  
## Clusters -0.27020566 -0.07249167 -0.44446926  
## Cocoa\_Puffs 0.21306247 -0.89778146 -0.70142805  
## Corn\_Chex 1.42123279 -0.89778146 1.86815984  
## Corn\_Flakes 1.54204982 -0.48513656 1.61120105  
## Corn\_Pops -0.87429082 -0.48513656 -0.44446926  
## Count\_Chocula 0.21306247 -0.89778146 -0.70142805  
## Cracklin'\_Oat\_Bran -0.27020566 0.75279812 -1.21534562  
## Crispix 0.69633060 -0.48513656 1.61120105  
## Crispy\_Wheat\_&\_Raisins -0.27020566 -0.07249167 -0.95838683  
## Double\_Chex 0.33387950 -0.48513656 0.84032469  
## Froot\_Loops -0.45143121 -0.48513656 -0.95838683  
## Frosted\_Flakes 0.45469653 -0.48513656 -0.18751047  
## Frosted\_Mini-Wheats -1.96164410 0.34015322 -0.18751047  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats -0.02857160 1.16544301 -0.70142805  
## Fruitful\_Bran 0.93796466 1.16544301 -0.18751047  
## Fruity\_Pebbles -0.33061417 -0.89778146 -0.44446926  
## Golden\_Crisp -1.41796746 -0.89778146 -0.95838683  
## Golden\_Grahams 1.42123279 -0.89778146 0.06944832  
## Grape\_Nuts\_Flakes -0.27020566 0.34015322 0.06944832  
## Grape-Nuts 0.09224544 0.34015322 0.58336590  
## Great\_Grains\_Pecan -1.05551637 0.34015322 -0.44446926  
## Honey\_Graham\_Ohs 0.69633060 -0.48513656 -0.70142805  
## Honey\_Nut\_Cheerios 1.05878169 -0.27881412 -0.82990744  
## Honey-comb 0.21306247 -0.89778146 -0.18751047  
## Just\_Right\_Crunchy\_\_Nuggets 0.09224544 -0.48513656 0.58336590  
## Just\_Right\_Fruit\_&\_Nut 0.09224544 -0.07249167 1.35424227  
## Kix 1.17959872 -0.89778146 1.61120105  
## Life -0.14938863 -0.07249167 -0.70142805  
## Lucky\_Charms 0.21306247 -0.89778146 -0.70142805  
## Maypo -1.96164410 -0.89778146 0.32640711  
## Muesli\_Raisins,\_Dates,\_&\_Almonds -0.81388230 0.34015322 0.32640711  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans -0.14938863 0.34015322 0.32640711  
## Mueslix\_Crispy\_Blend -0.14938863 0.34015322 0.58336590  
## Multi-Grain\_Cheerios 0.69633060 -0.07249167 0.06944832  
## Nut&Honey\_Crunch 0.33387950 -0.89778146 0.06944832  
## Nutri-Grain\_Almond-Raisin 0.69633060 0.34015322 1.61120105  
## Nutri-grain\_Wheat 0.09224544 0.34015322 0.84032469  
## Oatmeal\_Raisin\_Crisp 0.09224544 -0.27881412 -0.31598986  
## Post\_Nat.\_Raisin\_Bran 0.45469653 1.57808790 -0.95838683  
## Product\_19 1.90450091 -0.48513656 1.35424227  
## Puffed\_Rice -1.96164410 -0.89778146 -0.44446926  
## Puffed\_Wheat -1.96164410 -0.48513656 -1.21534562  
## Quaker\_Oat\_Squares -0.33061417 -0.07249167 -0.18751047  
## Raisin\_Bran 0.57551356 1.16544301 -0.18751047  
## Raisin\_Nut\_Bran -0.27020566 0.13383078 -1.08686623  
## Raisin\_Squares -1.96164410 -0.07249167 0.06944832  
## Rice\_Chex 0.93796466 -0.89778146 2.12511863  
## Rice\_Krispies 1.54204982 -0.89778146 1.86815984  
## Shredded\_Wheat -1.96164410 0.34015322 0.32640711  
## Shredded\_Wheat\_'n'Bran -1.96164410 0.75279812 1.09728348  
## Shredded\_Wheat\_spoon\_size -1.96164410 0.34015322 1.35424227  
## Smacks -1.11592488 -0.48513656 -1.47230441  
## Special\_K 0.81714763 -0.48513656 0.32640711  
## Strawberry\_Fruit\_Wheats -1.78041856 0.34015322 0.06944832  
## Total\_Corn\_Flakes 0.45469653 -0.89778146 1.61120105  
## Total\_Raisin\_Bran 0.33387950 0.75279812 0.06944832  
## Total\_Whole\_Grain 0.45469653 0.34015322 0.32640711  
## Triples 1.05878169 -0.89778146 1.61120105  
## Trix -0.27020566 -0.89778146 -0.44446926  
## Wheat\_Chex 0.81714763 0.34015322 0.58336590  
## Wheaties 0.45469653 0.34015322 0.58336590  
## Wheaties\_Honey\_Gold 0.45469653 -0.48513656 0.32640711  
## sugars potass vitamins  
## 100%\_Bran -0.25420505 2.56052289 -0.1818422  
## 100%\_Natural\_Bran 0.20460407 0.51477378 -1.3032024  
## All-Bran -0.48360961 3.12486748 -0.1818422  
## All-Bran\_with\_Extra\_Fiber -1.63063240 3.26595362 -0.1818422  
## Apple\_Cinnamon\_Cheerios 0.66341318 -0.40228617 -0.1818422  
## Apple\_Jacks 1.58103142 -0.96663076 -0.1818422  
## Basic\_4 0.20460407 0.02097226 -0.1818422  
## Bran\_Chex -0.25420505 0.37368763 -0.1818422  
## Bran\_Flakes -0.48360961 1.29074758 -0.1818422  
## Cap'n'Crunch 1.12222230 -0.89608768 -0.1818422  
## Cheerios -1.40122785 0.09151534 -0.1818422  
## Cinnamon\_Toast\_Crunch 0.43400862 -0.75500154 -0.1818422  
## Clusters -0.02480049 0.09151534 -0.1818422  
## Cocoa\_Puffs 1.35162686 -0.61391539 -0.1818422  
## Corn\_Chex -0.94241873 -1.03717383 -0.1818422  
## Corn\_Flakes -1.17182329 -0.89608768 -0.1818422  
## Corn\_Pops 1.12222230 -1.10771690 -0.1818422  
## Count\_Chocula 1.35162686 -0.47282925 -0.1818422  
## Cracklin'\_Oat\_Bran -0.02480049 0.86748914 -0.1818422  
## Crispix -0.94241873 -0.96663076 -0.1818422  
## Crispy\_Wheat\_&\_Raisins 0.66341318 0.30314456 -0.1818422  
## Double\_Chex -0.48360961 -0.26120003 -0.1818422  
## Froot\_Loops 1.35162686 -0.96663076 -0.1818422  
## Frosted\_Flakes 0.89281774 -1.03717383 -0.1818422  
## Frosted\_Mini-Wheats -0.02480049 0.02097226 -0.1818422  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0.66341318 1.43183372 -0.1818422  
## Fruitful\_Bran 1.12222230 1.29074758 -0.1818422  
## Fruity\_Pebbles 1.12222230 -1.03717383 -0.1818422  
## Golden\_Crisp 1.81043598 -0.82554461 -0.1818422  
## Golden\_Grahams 0.43400862 -0.75500154 -0.1818422  
## Grape\_Nuts\_Flakes -0.48360961 -0.19065695 -0.1818422  
## Grape-Nuts -0.94241873 -0.12011388 -0.1818422  
## Great\_Grains\_Pecan -0.71301417 0.02097226 -0.1818422  
## Honey\_Graham\_Ohs 0.89281774 -0.75500154 -0.1818422  
## Honey\_Nut\_Cheerios 0.66341318 -0.12011388 -0.1818422  
## Honey-comb 0.89281774 -0.89608768 -0.1818422  
## Just\_Right\_Crunchy\_\_Nuggets -0.25420505 -0.54337232 3.1822385  
## Just\_Right\_Fruit\_&\_Nut 0.43400862 -0.04957081 3.1822385  
## Kix -0.94241873 -0.82554461 -0.1818422  
## Life -0.25420505 -0.04957081 -0.1818422  
## Lucky\_Charms 1.12222230 -0.61391539 -0.1818422  
## Maypo -0.94241873 -0.04957081 -0.1818422  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 0.89281774 1.00857529 -0.1818422  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0.89281774 1.00857529 -0.1818422  
## Mueslix\_Crispy\_Blend 1.35162686 0.86748914 -0.1818422  
## Multi-Grain\_Cheerios -0.25420505 -0.12011388 -0.1818422  
## Nut&Honey\_Crunch 0.43400862 -0.82554461 -0.1818422  
## Nutri-Grain\_Almond-Raisin -0.02480049 0.44423070 -0.1818422  
## Nutri-grain\_Wheat -1.17182329 -0.12011388 -0.1818422  
## Oatmeal\_Raisin\_Crisp 0.66341318 0.30314456 -0.1818422  
## Post\_Nat.\_Raisin\_Bran 1.58103142 2.27835060 -0.1818422  
## Product\_19 -0.94241873 -0.75500154 3.1822385  
## Puffed\_Rice -1.63063240 -1.17825998 -1.3032024  
## Puffed\_Wheat -1.63063240 -0.68445846 -1.3032024  
## Quaker\_Oat\_Squares -0.25420505 0.16205841 -0.1818422  
## Raisin\_Bran 1.12222230 1.99617831 -0.1818422  
## Raisin\_Nut\_Bran 0.20460407 0.58531685 -0.1818422  
## Raisin\_Squares -0.25420505 0.16205841 -0.1818422  
## Rice\_Chex -1.17182329 -0.96663076 -0.1818422  
## Rice\_Krispies -0.94241873 -0.89608768 -0.1818422  
## Shredded\_Wheat -1.63063240 -0.04957081 -1.3032024  
## Shredded\_Wheat\_'n'Bran -1.63063240 0.58531685 -1.3032024  
## Shredded\_Wheat\_spoon\_size -1.63063240 0.30314456 -1.3032024  
## Smacks 1.81043598 -0.82554461 -0.1818422  
## Special\_K -0.94241873 -0.61391539 -0.1818422  
## Strawberry\_Fruit\_Wheats -0.48360961 -0.12011388 -0.1818422  
## Total\_Corn\_Flakes -0.94241873 -0.89608768 3.1822385  
## Total\_Raisin\_Bran 1.58103142 1.85509216 3.1822385  
## Total\_Whole\_Grain -0.94241873 0.16205841 3.1822385  
## Triples -0.94241873 -0.54337232 -0.1818422  
## Trix 1.12222230 -1.03717383 -0.1818422  
## Wheat\_Chex -0.94241873 0.23260148 -0.1818422  
## Wheaties -0.94241873 0.16205841 -0.1818422  
## Wheaties\_Honey\_Gold 0.20460407 -0.54337232 -0.1818422  
## weight cups rating mfr\_A  
## 100%\_Bran -0.2008324 -2.08565823 1.85490376 0  
## 100%\_Natural\_Bran -0.2008324 0.75675340 -0.59771126 0  
## All-Bran -0.2008324 -2.08565823 1.21519648 0  
## All-Bran\_with\_Extra\_Fiber -0.2008324 -1.36444931 3.65784358 0  
## Apple\_Cinnamon\_Cheerios -0.2008324 -0.30384795 -0.91652483 0  
## Apple\_Jacks -0.2008324 0.75675340 -0.65539984 0  
## Basic\_4 1.9501886 -0.30384795 -0.38002951 0  
## Bran\_Chex -0.2008324 -0.64324039 0.48087533 0  
## Bran\_Flakes -0.2008324 -0.64324039 0.77969576 0  
## Cap'n'Crunch -0.2008324 -0.30384795 -1.73360655 0  
## Cheerios -0.2008324 1.81735475 0.59807496 0  
## Cinnamon\_Toast\_Crunch -0.2008324 -0.30384795 -1.60671768 0  
## Clusters -0.2008324 -1.36444931 -0.14048876 0  
## Cocoa\_Puffs -0.2008324 0.75675340 -1.39915514 0  
## Corn\_Chex -0.2008324 0.75675340 -0.06603869 0  
## Corn\_Flakes -0.2008324 0.75675340 0.24879639 0  
## Corn\_Pops -0.2008324 0.75675340 -0.46951197 0  
## Count\_Chocula -0.2008324 0.75675340 -1.42337774 0  
## Cracklin'\_Oat\_Bran -0.2008324 -1.36444931 -0.13702824 0  
## Crispix -0.2008324 0.75675340 0.32235640 0  
## Crispy\_Wheat\_&\_Raisins -0.2008324 -0.30384795 -0.44147911 0  
## Double\_Chex -0.2008324 -0.30384795 0.13959735 0  
## Froot\_Loops -0.2008324 0.75675340 -0.72427057 0  
## Frosted\_Flakes -0.2008324 -0.30384795 -0.77925310 0  
## Frosted\_Mini-Wheats -0.2008324 -0.09172768 1.13821301 0  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 1.4287290 -0.64324039 -0.10366038 0  
## Fruitful\_Bran 1.9501886 -0.64324039 -0.09664548 0  
## Fruity\_Pebbles -0.2008324 -0.30384795 -1.02225423 0  
## Golden\_Crisp -0.2008324 0.24766475 -0.50730289 0  
## Golden\_Grahams -0.2008324 -0.30384795 -1.32308140 0  
## Grape\_Nuts\_Flakes -0.2008324 0.24766475 0.69155685 0  
## Grape-Nuts -0.2008324 -2.42505066 0.78377123 0  
## Great\_Grains\_Pecan -0.2008324 -2.08565823 0.24511896 0  
## Honey\_Graham\_Ohs -0.2008324 0.75675340 -1.46080340 0  
## Honey\_Nut\_Cheerios -0.2008324 -0.30384795 -0.80517325 0  
## Honey-comb -0.2008324 2.15674718 -0.97118798 0  
## Just\_Right\_Crunchy\_\_Nuggets -0.2008324 0.75675340 -0.41671824 0  
## Just\_Right\_Fruit\_&\_Nut 1.7546413 -0.30384795 -0.42043579 0  
## Kix -0.2008324 2.87795610 -0.22308231 0  
## Life -0.2008324 -0.64324039 0.21065609 0  
## Lucky\_Charms -0.2008324 0.75675340 -1.11426481 0  
## Maypo -0.2008324 0.75675340 0.88922515 1  
## Muesli\_Raisins,\_Dates,\_&\_Almonds -0.2008324 0.75675340 -0.37302488 0  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans -0.2008324 0.75675340 -0.58658904 0  
## Mueslix\_Crispy\_Blend 3.0582904 -0.64324039 -0.85924775 0  
## Multi-Grain\_Cheerios -0.2008324 0.75675340 -0.16145563 0  
## Nut&Honey\_Crunch -0.2008324 -0.64324039 -0.88697142 0  
## Nutri-Grain\_Almond-Raisin 1.9501886 -0.64324039 -0.11967375 0  
## Nutri-grain\_Wheat -0.2008324 0.75675340 1.23068291 0  
## Oatmeal\_Raisin\_Crisp 1.4287290 -1.36444931 -0.84945049 0  
## Post\_Nat.\_Raisin\_Bran 1.9501886 -0.64324039 -0.32287913 0  
## Product\_19 -0.2008324 0.75675340 -0.06186866 0  
## Puffed\_Rice -3.4599552 0.75675340 1.31001152 0  
## Puffed\_Wheat -3.4599552 0.75675340 1.47030646 0  
## Quaker\_Oat\_Squares -0.2008324 -1.36444931 0.50878106 0  
## Raisin\_Bran 1.9501886 -0.30384795 -0.22179377 0  
## Raisin\_Nut\_Bran -0.2008324 -1.36444931 -0.19014120 0  
## Raisin\_Squares -0.2008324 -1.36444931 0.92358705 0  
## Rice\_Chex -0.2008324 1.30826610 -0.02656845 0  
## Rice\_Krispies -0.2008324 0.75675340 -0.12909114 0  
## Shredded\_Wheat -1.3089342 0.75675340 1.84299757 0  
## Shredded\_Wheat\_'n'Bran -0.2008324 -0.64324039 2.28743193 0  
## Shredded\_Wheat\_spoon\_size -0.2008324 -0.64324039 2.16834997 0  
## Smacks -0.2008324 -0.30384795 -0.79392626 0  
## Special\_K -0.2008324 0.75675340 0.76669214 0  
## Strawberry\_Fruit\_Wheats -0.2008324 0.75675340 1.21081332 0  
## Total\_Corn\_Flakes -0.2008324 0.75675340 -0.25168258 0  
## Total\_Raisin\_Bran 3.0582904 0.75675340 -0.98185009 0  
## Total\_Whole\_Grain -0.2008324 0.75675340 0.30548275 0  
## Triples -0.2008324 -0.30384795 -0.23269772 0  
## Trix -0.2008324 0.75675340 -1.04166919 0  
## Wheat\_Chex -0.2008324 -0.64324039 0.52841741 0  
## Wheaties -0.2008324 0.75675340 0.65701831 0  
## Wheaties\_Honey\_Gold -0.2008324 -0.30384795 -0.44066942 0  
## mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R  
## 100%\_Bran 0 0 1 0 0 0  
## 100%\_Natural\_Bran 0 0 0 0 1 0  
## All-Bran 0 1 0 0 0 0  
## All-Bran\_with\_Extra\_Fiber 0 1 0 0 0 0  
## Apple\_Cinnamon\_Cheerios 1 0 0 0 0 0  
## Apple\_Jacks 0 1 0 0 0 0  
## Basic\_4 1 0 0 0 0 0  
## Bran\_Chex 0 0 0 0 0 1  
## Bran\_Flakes 0 0 0 1 0 0  
## Cap'n'Crunch 0 0 0 0 1 0  
## Cheerios 1 0 0 0 0 0  
## Cinnamon\_Toast\_Crunch 1 0 0 0 0 0  
## Clusters 1 0 0 0 0 0  
## Cocoa\_Puffs 1 0 0 0 0 0  
## Corn\_Chex 0 0 0 0 0 1  
## Corn\_Flakes 0 1 0 0 0 0  
## Corn\_Pops 0 1 0 0 0 0  
## Count\_Chocula 1 0 0 0 0 0  
## Cracklin'\_Oat\_Bran 0 1 0 0 0 0  
## Crispix 0 1 0 0 0 0  
## Crispy\_Wheat\_&\_Raisins 1 0 0 0 0 0  
## Double\_Chex 0 0 0 0 0 1  
## Froot\_Loops 0 1 0 0 0 0  
## Frosted\_Flakes 0 1 0 0 0 0  
## Frosted\_Mini-Wheats 0 1 0 0 0 0  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0 0 0 1 0 0  
## Fruitful\_Bran 0 1 0 0 0 0  
## Fruity\_Pebbles 0 0 0 1 0 0  
## Golden\_Crisp 0 0 0 1 0 0  
## Golden\_Grahams 1 0 0 0 0 0  
## Grape\_Nuts\_Flakes 0 0 0 1 0 0  
## Grape-Nuts 0 0 0 1 0 0  
## Great\_Grains\_Pecan 0 0 0 1 0 0  
## Honey\_Graham\_Ohs 0 0 0 0 1 0  
## Honey\_Nut\_Cheerios 1 0 0 0 0 0  
## Honey-comb 0 0 0 1 0 0  
## Just\_Right\_Crunchy\_\_Nuggets 0 1 0 0 0 0  
## Just\_Right\_Fruit\_&\_Nut 0 1 0 0 0 0  
## Kix 1 0 0 0 0 0  
## Life 0 0 0 0 1 0  
## Lucky\_Charms 1 0 0 0 0 0  
## Maypo 0 0 0 0 0 0  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 0 0 0 0 0 1  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0 0 0 0 0 1  
## Mueslix\_Crispy\_Blend 0 1 0 0 0 0  
## Multi-Grain\_Cheerios 1 0 0 0 0 0  
## Nut&Honey\_Crunch 0 1 0 0 0 0  
## Nutri-Grain\_Almond-Raisin 0 1 0 0 0 0  
## Nutri-grain\_Wheat 0 1 0 0 0 0  
## Oatmeal\_Raisin\_Crisp 1 0 0 0 0 0  
## Post\_Nat.\_Raisin\_Bran 0 0 0 1 0 0  
## Product\_19 0 1 0 0 0 0  
## Puffed\_Rice 0 0 0 0 1 0  
## Puffed\_Wheat 0 0 0 0 1 0  
## Quaker\_Oat\_Squares 0 0 0 0 1 0  
## Raisin\_Bran 0 1 0 0 0 0  
## Raisin\_Nut\_Bran 1 0 0 0 0 0  
## Raisin\_Squares 0 1 0 0 0 0  
## Rice\_Chex 0 0 0 0 0 1  
## Rice\_Krispies 0 1 0 0 0 0  
## Shredded\_Wheat 0 0 1 0 0 0  
## Shredded\_Wheat\_'n'Bran 0 0 1 0 0 0  
## Shredded\_Wheat\_spoon\_size 0 0 1 0 0 0  
## Smacks 0 1 0 0 0 0  
## Special\_K 0 1 0 0 0 0  
## Strawberry\_Fruit\_Wheats 0 0 1 0 0 0  
## Total\_Corn\_Flakes 1 0 0 0 0 0  
## Total\_Raisin\_Bran 1 0 0 0 0 0  
## Total\_Whole\_Grain 1 0 0 0 0 0  
## Triples 1 0 0 0 0 0  
## Trix 1 0 0 0 0 0  
## Wheat\_Chex 0 0 0 0 0 1  
## Wheaties 1 0 0 0 0 0  
## Wheaties\_Honey\_Gold 1 0 0 0 0 0  
## type\_H type\_C shelf\_1 shelf\_2 shelf\_3  
## 100%\_Bran 0 1 0 0 1  
## 100%\_Natural\_Bran 0 1 0 0 1  
## All-Bran 0 1 0 0 1  
## All-Bran\_with\_Extra\_Fiber 0 1 0 0 1  
## Apple\_Cinnamon\_Cheerios 0 1 1 0 0  
## Apple\_Jacks 0 1 0 1 0  
## Basic\_4 0 1 0 0 1  
## Bran\_Chex 0 1 1 0 0  
## Bran\_Flakes 0 1 0 0 1  
## Cap'n'Crunch 0 1 0 1 0  
## Cheerios 0 1 1 0 0  
## Cinnamon\_Toast\_Crunch 0 1 0 1 0  
## Clusters 0 1 0 0 1  
## Cocoa\_Puffs 0 1 0 1 0  
## Corn\_Chex 0 1 1 0 0  
## Corn\_Flakes 0 1 1 0 0  
## Corn\_Pops 0 1 0 1 0  
## Count\_Chocula 0 1 0 1 0  
## Cracklin'\_Oat\_Bran 0 1 0 0 1  
## Crispix 0 1 0 0 1  
## Crispy\_Wheat\_&\_Raisins 0 1 0 0 1  
## Double\_Chex 0 1 0 0 1  
## Froot\_Loops 0 1 0 1 0  
## Frosted\_Flakes 0 1 1 0 0  
## Frosted\_Mini-Wheats 0 1 0 1 0  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 0 1 0 0 1  
## Fruitful\_Bran 0 1 0 0 1  
## Fruity\_Pebbles 0 1 0 1 0  
## Golden\_Crisp 0 1 1 0 0  
## Golden\_Grahams 0 1 0 1 0  
## Grape\_Nuts\_Flakes 0 1 0 0 1  
## Grape-Nuts 0 1 0 0 1  
## Great\_Grains\_Pecan 0 1 0 0 1  
## Honey\_Graham\_Ohs 0 1 0 1 0  
## Honey\_Nut\_Cheerios 0 1 1 0 0  
## Honey-comb 0 1 1 0 0  
## Just\_Right\_Crunchy\_\_Nuggets 0 1 0 0 1  
## Just\_Right\_Fruit\_&\_Nut 0 1 0 0 1  
## Kix 0 1 0 1 0  
## Life 0 1 0 1 0  
## Lucky\_Charms 0 1 0 1 0  
## Maypo 1 0 0 1 0  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 0 1 0 0 1  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0 1 0 0 1  
## Mueslix\_Crispy\_Blend 0 1 0 0 1  
## Multi-Grain\_Cheerios 0 1 1 0 0  
## Nut&Honey\_Crunch 0 1 0 1 0  
## Nutri-Grain\_Almond-Raisin 0 1 0 0 1  
## Nutri-grain\_Wheat 0 1 0 0 1  
## Oatmeal\_Raisin\_Crisp 0 1 0 0 1  
## Post\_Nat.\_Raisin\_Bran 0 1 0 0 1  
## Product\_19 0 1 0 0 1  
## Puffed\_Rice 0 1 0 0 1  
## Puffed\_Wheat 0 1 0 0 1  
## Quaker\_Oat\_Squares 0 1 0 0 1  
## Raisin\_Bran 0 1 0 1 0  
## Raisin\_Nut\_Bran 0 1 0 0 1  
## Raisin\_Squares 0 1 0 0 1  
## Rice\_Chex 0 1 1 0 0  
## Rice\_Krispies 0 1 1 0 0  
## Shredded\_Wheat 0 1 1 0 0  
## Shredded\_Wheat\_'n'Bran 0 1 1 0 0  
## Shredded\_Wheat\_spoon\_size 0 1 1 0 0  
## Smacks 0 1 0 1 0  
## Special\_K 0 1 1 0 0  
## Strawberry\_Fruit\_Wheats 0 1 0 1 0  
## Total\_Corn\_Flakes 0 1 0 0 1  
## Total\_Raisin\_Bran 0 1 0 0 1  
## Total\_Whole\_Grain 0 1 0 0 1  
## Triples 0 1 0 0 1  
## Trix 0 1 0 1 0  
## Wheat\_Chex 0 1 1 0 0  
## Wheaties 0 1 1 0 0  
## Wheaties\_Honey\_Gold 0 1 1 0 0

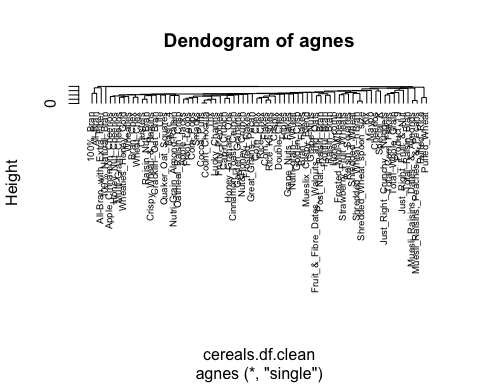
#Compute euclidian distances  
euc\_dist <- dist(cereals.df.clean, method = "euclidean")  
euc\_dist

## 100%\_Bran 100%\_Natural\_Bran All-Bran  
## 100%\_Natural\_Bran 7.6266991   
## All-Bran 2.3836055 7.8789217   
## All-Bran\_with\_Extra\_Fiber 3.6740252 10.0783897 4.0310509  
## Apple\_Cinnamon\_Cheerios 6.9026411 4.6862619 6.7307093  
## Apple\_Jacks 7.6725919 6.1368377 7.5961656  
## Basic\_4 7.4457856 5.5304580 7.0812977  
## Bran\_Chex 5.5381128 6.0379437 5.2651251  
## Bran\_Flakes 4.3800446 6.6235754 3.9958584  
## Cap'n'Crunch 8.3935596 5.3583134 8.0873511  
## Cheerios 7.8021188 6.6231292 7.2966504  
## Cinnamon\_Toast\_Crunch 8.4191819 4.9345424 8.1017760  
## Clusters 5.8053509 4.6110240 5.7013960  
## Cocoa\_Puffs 8.2335529 5.8047208 8.0297902  
## Corn\_Chex 8.7798699 7.6757807 8.2744661  
## Corn\_Flakes 8.2830849 7.6660864 7.6389546  
## Corn\_Pops 7.9944028 6.3057677 7.9831189  
## Count\_Chocula 8.1898590 5.7823539 7.9730605  
## Cracklin'\_Oat\_Bran 5.1063997 3.9461456 4.8457369  
## Crispix 8.1071634 7.1314523 7.6423704  
## Crispy\_Wheat\_&\_Raisins 5.9512155 5.0200240 5.8686293  
## Double\_Chex 6.9524525 6.6171774 6.6428664  
## Froot\_Loops 7.5791358 5.3118920 7.4888583  
## Frosted\_Flakes 7.8137448 6.7240436 7.4735784  
## Frosted\_Mini-Wheats 5.9402052 6.1274257 6.2606010  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 5.3395558 4.8687541 5.1663800  
## Fruitful\_Bran 5.9660283 6.8920825 5.3468212  
## Fruity\_Pebbles 7.9616232 5.8086800 7.8975930  
## Golden\_Crisp 7.6118336 6.1521272 7.8488303  
## Golden\_Grahams 8.2155331 6.4987988 7.7090330  
## Grape\_Nuts\_Flakes 5.8762118 5.3512675 5.8582013  
## Grape-Nuts 5.9093776 7.1379320 5.7332787  
## Great\_Grains\_Pecan 5.9515366 4.4074232 6.1064902  
## Honey\_Graham\_Ohs 8.2887406 5.0777853 8.0051052  
## Honey\_Nut\_Cheerios 6.6633291 5.6558954 6.2417310  
## Honey-comb 8.8778054 6.7249863 8.6964860  
## Just\_Right\_Crunchy\_\_Nuggets 8.2002454 7.0291745 7.8594036  
## Just\_Right\_Fruit\_&\_Nut 8.4896500 7.5686806 8.1180188  
## Kix 9.4239851 7.1072283 8.9875204  
## Life 5.7497945 4.5688949 5.6790667  
## Lucky\_Charms 7.8111520 5.5003209 7.6131118  
## Maypo 7.2157747 5.8056803 7.4677082  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 7.4483244 4.0560065 7.3909280  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 7.5069524 4.2575691 7.2898589  
## Mueslix\_Crispy\_Blend 8.2367726 6.2022682 7.8986660  
## Multi-Grain\_Cheerios 6.9105215 5.7527931 6.5651780  
## Nut&Honey\_Crunch 7.7135129 5.8467711 7.3133929  
## Nutri-Grain\_Almond-Raisin 7.6066243 6.1227349 7.0345300  
## Nutri-grain\_Wheat 6.4108410 6.7915932 6.1033633  
## Oatmeal\_Raisin\_Crisp 6.8356491 5.0408525 6.5771481  
## Post\_Nat.\_Raisin\_Bran 5.4705880 6.2468230 5.1361120  
## Product\_19 8.6365964 8.6179562 7.9378230  
## Puffed\_Rice 8.4633018 7.9638066 8.8099724  
## Puffed\_Wheat 7.6091622 7.6250744 8.0416482  
## Quaker\_Oat\_Squares 5.3497584 5.4275912 5.2910480  
## Raisin\_Bran 6.0066259 6.2793945 5.4089533  
## Raisin\_Nut\_Bran 5.1517296 4.5341150 5.0654780  
## Raisin\_Squares 5.8792743 6.4409753 6.1099263  
## Rice\_Chex 9.2387422 7.8279107 8.8235258  
## Rice\_Krispies 8.7629656 7.6957619 8.0963456  
## Shredded\_Wheat 6.6909093 6.9921251 7.2383489  
## Shredded\_Wheat\_'n'Bran 5.9770936 7.3012408 6.5384493  
## Shredded\_Wheat\_spoon\_size 6.3999630 7.3268536 6.8954089  
## Smacks 7.2672532 5.3268758 7.3505354  
## Special\_K 7.4539539 7.3174145 7.0251392  
## Strawberry\_Fruit\_Wheats 6.3299107 6.3735637 6.8691408  
## Total\_Corn\_Flakes 8.9677836 7.6995083 8.6432225  
## Total\_Raisin\_Bran 8.3962405 7.8591305 8.0762469  
## Total\_Whole\_Grain 7.0866793 7.1110045 6.8092521  
## Triples 7.9493850 6.6146453 7.4300390  
## Trix 8.2713327 5.7281376 8.1966382  
## Wheat\_Chex 6.0161259 6.2407001 5.5804667  
## Wheaties 6.4386993 5.9653761 6.1471447  
## Wheaties\_Honey\_Gold 7.2322527 5.8155164 6.9380909  
## All-Bran\_with\_Extra\_Fiber  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios 9.4108685  
## Apple\_Jacks 9.7639727  
## Basic\_4 9.5317699  
## Bran\_Chex 7.3598433  
## Bran\_Flakes 6.0915088  
## Cap'n'Crunch 10.8914615  
## Cheerios 9.1275552  
## Cinnamon\_Toast\_Crunch 10.8678223  
## Clusters 8.3189929  
## Cocoa\_Puffs 10.5161342  
## Corn\_Chex 10.1554001  
## Corn\_Flakes 9.4169356  
## Corn\_Pops 9.8970977  
## Count\_Chocula 10.4766296  
## Cracklin'\_Oat\_Bran 7.6751972  
## Crispix 9.3531397  
## Crispy\_Wheat\_&\_Raisins 8.3591598  
## Double\_Chex 8.6491973  
## Froot\_Loops 9.7723892  
## Frosted\_Flakes 9.8130044  
## Frosted\_Mini-Wheats 7.4920666  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 7.7531814  
## Fruitful\_Bran 7.8523515  
## Fruity\_Pebbles 10.2983856  
## Golden\_Crisp 9.8802443  
## Golden\_Grahams 10.3798234  
## Grape\_Nuts\_Flakes 7.6615647  
## Grape-Nuts 7.7080125  
## Great\_Grains\_Pecan 8.4021102  
## Honey\_Graham\_Ohs 10.5909872  
## Honey\_Nut\_Cheerios 9.0523381  
## Honey-comb 10.6967427  
## Just\_Right\_Crunchy\_\_Nuggets 9.8318444  
## Just\_Right\_Fruit\_&\_Nut 10.2339181  
## Kix 10.7001447  
## Life 8.0731607  
## Lucky\_Charms 10.1070759  
## Maypo 8.7992670  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 9.6751724  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 9.7516809  
## Mueslix\_Crispy\_Blend 10.3777003  
## Multi-Grain\_Cheerios 8.7136219  
## Nut&Honey\_Crunch 9.9014686  
## Nutri-Grain\_Almond-Raisin 9.3826223  
## Nutri-grain\_Wheat 7.3709782  
## Oatmeal\_Raisin\_Crisp 9.4238568  
## Post\_Nat.\_Raisin\_Bran 7.7842624  
## Product\_19 9.8245228  
## Puffed\_Rice 9.4500947  
## Puffed\_Wheat 8.6097483  
## Quaker\_Oat\_Squares 7.5947934  
## Raisin\_Bran 7.9481128  
## Raisin\_Nut\_Bran 7.8390850  
## Raisin\_Squares 7.5591187  
## Rice\_Chex 10.4619367  
## Rice\_Krispies 10.0416490  
## Shredded\_Wheat 7.6617908  
## Shredded\_Wheat\_'n'Bran 6.9026494  
## Shredded\_Wheat\_spoon\_size 7.3941861  
## Smacks 9.7297039  
## Special\_K 8.7845513  
## Strawberry\_Fruit\_Wheats 7.8043198  
## Total\_Corn\_Flakes 10.4661465  
## Total\_Raisin\_Bran 10.2624921  
## Total\_Whole\_Grain 8.5274002  
## Triples 9.6503666  
## Trix 10.4694712  
## Wheat\_Chex 7.7020470  
## Wheaties 7.8923138  
## Wheaties\_Honey\_Gold 9.3227912  
## Apple\_Cinnamon\_Cheerios Apple\_Jacks  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks 3.2863571   
## Basic\_4 3.6155519 4.7941159  
## Bran\_Chex 3.1581686 4.2223130  
## Bran\_Flakes 4.4305851 4.8271068  
## Cap'n'Crunch 2.6467323 3.3347393  
## Cheerios 5.4519028 6.4032417  
## Cinnamon\_Toast\_Crunch 2.3843332 4.1080047  
## Clusters 2.4489630 4.2119144  
## Cocoa\_Puffs 2.5016885 2.2931620  
## Corn\_Chex 4.6207036 4.7314518  
## Corn\_Flakes 4.6241777 4.6077601  
## Corn\_Pops 3.5327615 1.2537665  
## Count\_Chocula 2.4985201 2.3269383  
## Cracklin'\_Oat\_Bran 3.3141011 4.9076141  
## Crispix 4.5889555 4.1525832  
## Crispy\_Wheat\_&\_Raisins 2.0630948 3.0114023  
## Double\_Chex 3.7976422 3.8240418  
## Froot\_Loops 2.7278332 1.0216928  
## Frosted\_Flakes 2.8625755 2.4286191  
## Frosted\_Mini-Wheats 4.4614994 3.4878521  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 3.7691143 4.8525987  
## Fruitful\_Bran 4.5798789 4.5356830  
## Fruity\_Pebbles 2.7507591 2.4030092  
## Golden\_Crisp 3.3505550 2.3899901  
## Golden\_Grahams 2.7152739 3.3934118  
## Grape\_Nuts\_Flakes 3.5083831 3.8487935  
## Grape-Nuts 4.6953389 5.2437786  
## Great\_Grains\_Pecan 3.8868406 5.5167696  
## Honey\_Graham\_Ohs 2.6722315 3.1007133  
## Honey\_Nut\_Cheerios 1.6503997 3.3009499  
## Honey-comb 3.7889225 2.9340144  
## Just\_Right\_Crunchy\_\_Nuggets 4.6246056 4.5365539  
## Just\_Right\_Fruit\_&\_Nut 5.4512660 5.5161439  
## Kix 4.9945921 4.8470515  
## Life 3.2225426 4.1112929  
## Lucky\_Charms 2.2220348 2.0517829  
## Maypo 4.9895022 4.7321232  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.4050362 5.2264439  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.2772146 5.2154170  
## Mueslix\_Crispy\_Blend 5.2290772 5.6875377  
## Multi-Grain\_Cheerios 2.3388597 3.4803991  
## Nut&Honey\_Crunch 2.7061136 2.5363446  
## Nutri-Grain\_Almond-Raisin 4.6489889 5.3981362  
## Nutri-grain\_Wheat 4.8083945 4.4658703  
## Oatmeal\_Raisin\_Crisp 2.9616150 4.4970648  
## Post\_Nat.\_Raisin\_Bran 4.7696739 5.3300835  
## Product\_19 5.8139434 5.6655598  
## Puffed\_Rice 6.8777715 6.5439343  
## Puffed\_Wheat 6.7764271 6.5024067  
## Quaker\_Oat\_Squares 3.7630418 4.4690695  
## Raisin\_Bran 4.4948025 4.6266923  
## Raisin\_Nut\_Bran 2.5219417 4.3029605  
## Raisin\_Squares 4.5543515 4.2612195  
## Rice\_Chex 5.0112824 4.9749925  
## Rice\_Krispies 4.6254639 4.5588799  
## Shredded\_Wheat 5.6527451 5.5480801  
## Shredded\_Wheat\_'n'Bran 6.0221132 6.2064370  
## Shredded\_Wheat\_spoon\_size 5.9620995 6.1080313  
## Smacks 2.9075187 1.7055047  
## Special\_K 5.3625599 5.2534977  
## Strawberry\_Fruit\_Wheats 4.6584995 3.8706119  
## Total\_Corn\_Flakes 5.1394578 5.5166489  
## Total\_Raisin\_Bran 6.1284416 6.4303437  
## Total\_Whole\_Grain 4.8348450 5.3980940  
## Triples 3.7987677 4.6787592  
## Trix 2.5756547 2.1638960  
## Wheat\_Chex 3.5814826 4.6839343  
## Wheaties 3.4400227 4.3986171  
## Wheaties\_Honey\_Gold 1.8819228 3.2715339  
## Basic\_4 Bran\_Chex Bran\_Flakes  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex 4.1257499   
## Bran\_Flakes 4.6222629 2.6985983   
## Cap'n'Crunch 4.3502769 4.4765074 5.6407446  
## Cheerios 4.9456203 5.2362273 5.3506026  
## Cinnamon\_Toast\_Crunch 3.9767858 4.5077111 5.8063979  
## Clusters 3.0411316 3.0619449 3.4964282  
## Cocoa\_Puffs 4.3768778 4.2784860 5.2550887  
## Corn\_Chex 4.5347840 3.6904628 4.9502729  
## Corn\_Flakes 4.6558552 3.5777719 4.5277038  
## Corn\_Pops 4.9210320 4.1691074 5.0149921  
## Count\_Chocula 4.3643757 4.2589128 5.2157992  
## Cracklin'\_Oat\_Bran 4.0254739 3.6332323 3.8889741  
## Crispix 4.1401741 3.7716515 4.2801908  
## Crispy\_Wheat\_&\_Raisins 3.6065868 2.8861575 3.2424974  
## Double\_Chex 3.8437423 2.4635607 3.2380461  
## Froot\_Loops 4.4145067 4.0265741 4.8574903  
## Frosted\_Flakes 4.4764735 3.3873497 4.5974217  
## Frosted\_Mini-Wheats 4.9924893 3.6183944 3.7005114  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 3.0319754 3.7540635 3.3813884  
## Fruitful\_Bran 3.4014760 4.0375605 3.5293767  
## Fruity\_Pebbles 4.4285847 3.9679647 4.8884091  
## Golden\_Crisp 5.2180940 4.2425549 4.8789733  
## Golden\_Grahams 3.9522210 3.8282461 4.9253096  
## Grape\_Nuts\_Flakes 3.6537068 2.6500870 2.4283597  
## Grape-Nuts 4.3872525 3.3787801 2.8918493  
## Great\_Grains\_Pecan 4.0934385 4.0350618 4.3054126  
## Honey\_Graham\_Ohs 4.2740624 4.3175096 5.4361897  
## Honey\_Nut\_Cheerios 3.4793856 2.9954622 3.7951890  
## Honey-comb 5.1606550 4.5377926 5.3393434  
## Just\_Right\_Crunchy\_\_Nuggets 4.7890834 4.6762650 5.1967088  
## Just\_Right\_Fruit\_&\_Nut 3.8926351 5.5133643 5.8027146  
## Kix 4.8284833 5.0446873 5.8144223  
## Life 3.9189971 3.2540817 3.6552452  
## Lucky\_Charms 3.9486421 3.9707949 4.8035534  
## Maypo 5.1187757 4.5955178 4.8344319  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 3.7989402 4.9797336 5.4178664  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 3.6151939 4.8952740 5.3372566  
## Mueslix\_Crispy\_Blend 2.9414801 5.8594946 6.1243554  
## Multi-Grain\_Cheerios 3.5741949 2.3685123 3.5783480  
## Nut&Honey\_Crunch 3.6340756 3.5787358 4.5622317  
## Nutri-Grain\_Almond-Raisin 1.8568302 4.4553416 4.8558214  
## Nutri-grain\_Wheat 4.5468198 3.2178384 3.0319774  
## Oatmeal\_Raisin\_Crisp 1.8762886 4.1291946 4.5239156  
## Post\_Nat.\_Raisin\_Bran 4.0402439 4.5995520 3.8472945  
## Product\_19 5.4332227 5.1680518 5.3254840  
## Puffed\_Rice 8.5870999 6.1295033 6.4610856  
## Puffed\_Wheat 8.5344824 5.9919997 6.0180075  
## Quaker\_Oat\_Squares 3.8452236 3.1047826 2.9058835  
## Raisin\_Bran 3.5493469 4.1428655 4.0198809  
## Raisin\_Nut\_Bran 3.5866034 3.0944861 3.2899894  
## Raisin\_Squares 5.0582788 3.5024584 3.6007248  
## Rice\_Chex 5.0101632 4.0932164 5.4305480  
## Rice\_Krispies 4.5242593 3.9449213 4.9191270  
## Shredded\_Wheat 6.5840254 4.2059290 4.6388103  
## Shredded\_Wheat\_'n'Bran 5.9995736 4.1480251 4.2811748  
## Shredded\_Wheat\_spoon\_size 5.9010307 4.1850629 4.4531411  
## Smacks 4.8310773 4.3397394 5.0834003  
## Special\_K 5.1006262 4.8007844 4.6869645  
## Strawberry\_Fruit\_Wheats 5.2881192 3.5974658 3.9365022  
## Total\_Corn\_Flakes 4.8371701 5.1006705 5.7181391  
## Total\_Raisin\_Bran 4.6759722 6.5443474 6.4351501  
## Total\_Whole\_Grain 4.7534524 4.3795554 4.4177744  
## Triples 3.2646549 3.5243637 4.2775201  
## Trix 4.3193432 4.1901137 5.2636355  
## Wheat\_Chex 3.8071669 1.4763312 2.9033929  
## Wheaties 3.6994227 2.4620750 3.2329642  
## Wheaties\_Honey\_Gold 3.2038044 2.5749257 3.9549586  
## Cap'n'Crunch Cheerios  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios 6.7956954   
## Cinnamon\_Toast\_Crunch 1.8912311 6.3998874  
## Clusters 3.9173163 5.1653666  
## Cocoa\_Puffs 2.2006735 6.4711069  
## Corn\_Chex 4.9376623 5.0167125  
## Corn\_Flakes 5.1358541 4.8503782  
## Corn\_Pops 3.4162329 6.8324982  
## Count\_Chocula 2.2196564 6.4647831  
## Cracklin'\_Oat\_Bran 4.5518269 5.7553936  
## Crispix 4.9195574 5.1228585  
## Crispy\_Wheat\_&\_Raisins 3.4446924 5.7108761  
## Double\_Chex 4.3583373 5.4218727  
## Froot\_Loops 2.8034580 6.0748483  
## Frosted\_Flakes 3.1106255 6.5136023  
## Frosted\_Mini-Wheats 5.4523702 5.9036054  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 4.8265576 5.7395119  
## Fruitful\_Bran 5.3090001 6.1186561  
## Fruity\_Pebbles 2.2106574 6.8263241  
## Golden\_Crisp 4.0802782 6.8327131  
## Golden\_Grahams 2.2410362 6.1499928  
## Grape\_Nuts\_Flakes 4.6670433 4.4866239  
## Grape-Nuts 5.5592927 6.0234812  
## Great\_Grains\_Pecan 4.9405903 6.0685748  
## Honey\_Graham\_Ohs 1.2008765 6.3035181  
## Honey\_Nut\_Cheerios 3.3018536 4.6703825  
## Honey-comb 3.9224981 6.2772902  
## Just\_Right\_Crunchy\_\_Nuggets 4.9482763 6.0227780  
## Just\_Right\_Fruit\_&\_Nut 5.7258904 6.4660947  
## Kix 5.1341562 4.6401273  
## Life 4.0859538 4.4454438  
## Lucky\_Charms 2.4343598 5.6419504  
## Maypo 5.9062173 5.0159412  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.1550474 5.1443285  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.9470676 4.9229115  
## Mueslix\_Crispy\_Blend 5.4847221 6.9380758  
## Multi-Grain\_Cheerios 3.7729167 4.3711204  
## Nut&Honey\_Crunch 2.4262613 5.8257192  
## Nutri-Grain\_Almond-Raisin 5.0805194 5.4055006  
## Nutri-grain\_Wheat 5.8085050 4.5495990  
## Oatmeal\_Raisin\_Crisp 3.8493462 5.7382695  
## Post\_Nat.\_Raisin\_Bran 5.6317670 6.6713022  
## Product\_19 6.1475944 5.5386569  
## Puffed\_Rice 7.4462033 8.2388486  
## Puffed\_Wheat 7.5924278 7.8111501  
## Quaker\_Oat\_Squares 4.7901886 4.9244511  
## Raisin\_Bran 5.1240546 5.9893130  
## Raisin\_Nut\_Bran 4.1427879 5.4511056  
## Raisin\_Squares 5.5349337 6.8466702  
## Rice\_Chex 5.1988614 5.7264044  
## Rice\_Krispies 4.9339689 4.9941918  
## Shredded\_Wheat 6.8719749 6.3087981  
## Shredded\_Wheat\_'n'Bran 7.3502667 6.1985151  
## Shredded\_Wheat\_spoon\_size 7.2197659 6.1362598  
## Smacks 3.0846213 6.9184550  
## Special\_K 6.5391921 2.9273158  
## Strawberry\_Fruit\_Wheats 5.5074371 6.0536563  
## Total\_Corn\_Flakes 5.5146963 5.8378880  
## Total\_Raisin\_Bran 6.6570955 7.2813007  
## Total\_Whole\_Grain 5.8384917 5.0178157  
## Triples 4.2689555 4.9583819  
## Trix 2.4216138 6.4081798  
## Wheat\_Chex 4.8399227 4.2429209  
## Wheaties 4.9922339 3.4224657  
## Wheaties\_Honey\_Gold 3.1666551 4.9789650  
## Cinnamon\_Toast\_Crunch Clusters  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters 3.5063874   
## Cocoa\_Puffs 2.5351882 3.9873884  
## Corn\_Chex 5.0529799 4.9316647  
## Corn\_Flakes 5.2206202 4.8668603  
## Corn\_Pops 4.0522456 4.3930503  
## Count\_Chocula 2.5450789 3.9726165  
## Cracklin'\_Oat\_Bran 4.2275136 2.2054449  
## Crispix 5.0192196 4.3377023  
## Crispy\_Wheat\_&\_Raisins 3.4664565 2.0254593  
## Double\_Chex 4.5577467 3.2845191  
## Froot\_Loops 3.3679874 3.7646098  
## Frosted\_Flakes 3.7892021 3.9765267  
## Frosted\_Mini-Wheats 5.6372252 3.8153686  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 4.7953327 3.0590695  
## Fruitful\_Bran 5.6982428 4.1425663  
## Fruity\_Pebbles 2.8135065 3.6904470  
## Golden\_Crisp 4.7337831 4.2742328  
## Golden\_Grahams 2.2934028 3.7012614  
## Grape\_Nuts\_Flakes 4.6558018 2.6937262  
## Grape-Nuts 5.6500044 3.1890405  
## Great\_Grains\_Pecan 4.4911979 2.2748350  
## Honey\_Graham\_Ohs 2.1433756 4.0843561  
## Honey\_Nut\_Cheerios 3.3940363 2.6512131  
## Honey-comb 4.4742109 5.2238939  
## Just\_Right\_Crunchy\_\_Nuggets 4.9900546 4.6429703  
## Just\_Right\_Fruit\_&\_Nut 5.7977361 5.0212880  
## Kix 4.8572101 5.5269516  
## Life 4.1761936 2.4319938  
## Lucky\_Charms 2.6687573 3.4773903  
## Maypo 5.7893301 4.3200158  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.9078169 3.9000536  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.7117294 3.8825717  
## Mueslix\_Crispy\_Blend 5.5127608 4.8729216  
## Multi-Grain\_Cheerios 3.5883108 3.1464482  
## Nut&Honey\_Crunch 2.7875950 3.0892549  
## Nutri-Grain\_Almond-Raisin 4.8819420 3.8584535  
## Nutri-grain\_Wheat 5.8475904 4.0809489  
## Oatmeal\_Raisin\_Crisp 3.5855103 2.2096978  
## Post\_Nat.\_Raisin\_Bran 5.8921952 4.3926857  
## Product\_19 6.2646005 5.6317153  
## Puffed\_Rice 7.5968708 6.6903030  
## Puffed\_Wheat 7.7541997 6.4600280  
## Quaker\_Oat\_Squares 5.0220692 2.1571532  
## Raisin\_Bran 5.3209564 4.2727001  
## Raisin\_Nut\_Bran 3.8250802 1.0040535  
## Raisin\_Squares 5.6791108 3.4843536  
## Rice\_Chex 5.2522135 5.4532009  
## Rice\_Krispies 5.0499039 4.9437465  
## Shredded\_Wheat 6.8293945 5.3140077  
## Shredded\_Wheat\_'n'Bran 7.2632574 5.0374335  
## Shredded\_Wheat\_spoon\_size 7.1296069 4.9960139  
## Smacks 3.7029423 3.6814996  
## Special\_K 6.6504688 4.9326803  
## Strawberry\_Fruit\_Wheats 5.6288039 4.3728396  
## Total\_Corn\_Flakes 5.2437398 4.9929134  
## Total\_Raisin\_Bran 6.7117309 6.1169739  
## Total\_Whole\_Grain 5.6029654 4.4037342  
## Triples 3.9179761 3.3018335  
## Trix 2.6291729 3.8762084  
## Wheat\_Chex 4.7549060 3.0787984  
## Wheaties 4.6910944 3.3128775  
## Wheaties\_Honey\_Gold 3.0496136 2.6098337  
## Cocoa\_Puffs Corn\_Chex Corn\_Flakes  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex 4.5969533   
## Corn\_Flakes 4.7489348 1.6360019   
## Corn\_Pops 2.3592012 4.4813515 4.3595727  
## Count\_Chocula 0.1431504 4.6191435 4.7678433  
## Cracklin'\_Oat\_Bran 4.9805390 6.1489926 5.8203707  
## Crispix 4.4669075 2.2175694 1.7413224  
## Crispy\_Wheat\_&\_Raisins 2.7304445 4.7342211 4.6315678  
## Double\_Chex 3.9561962 2.5773648 2.8403250  
## Froot\_Loops 2.0302158 4.7279900 4.5974798  
## Frosted\_Flakes 2.7162599 3.6326210 3.4641163  
## Frosted\_Mini-Wheats 4.7621784 5.1431459 4.7669721  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 4.8953426 5.9428201 5.8217087  
## Fruitful\_Bran 5.0701945 5.4867101 5.1918813  
## Fruity\_Pebbles 1.9647686 4.5353850 4.6936554  
## Golden\_Crisp 3.1844355 5.1362685 5.2215385  
## Golden\_Grahams 2.0115956 3.7101345 3.8549487  
## Grape\_Nuts\_Flakes 4.2717552 3.9361793 3.6904449  
## Grape-Nuts 5.6600322 4.6368612 4.4746296  
## Great\_Grains\_Pecan 5.5056913 6.0299101 5.9618179  
## Honey\_Graham\_Ohs 1.9693834 4.6642858 4.8056902  
## Honey\_Nut\_Cheerios 2.9607787 4.0909019 4.0676236  
## Honey-comb 2.7719782 3.8362450 4.0001157  
## Just\_Right\_Crunchy\_\_Nuggets 4.6438675 4.5531482 4.3732360  
## Just\_Right\_Fruit\_&\_Nut 5.7486855 5.4871479 5.5009907  
## Kix 4.2821221 3.1112460 3.2127644  
## Life 4.3906670 4.9892230 4.8271798  
## Lucky\_Charms 0.9989156 4.3115673 4.4413257  
## Maypo 5.3510698 5.1386142 5.0713774  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.2273308 5.9118847 6.2323859  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 5.0999081 5.7094855 6.0385751  
## Mueslix\_Crispy\_Blend 5.7596748 6.5505855 6.6210490  
## Multi-Grain\_Cheerios 2.9968867 3.0010209 2.8038313  
## Nut&Honey\_Crunch 2.6145677 3.7724512 3.7205992  
## Nutri-Grain\_Almond-Raisin 5.3926483 4.7797339 4.7015183  
## Nutri-grain\_Wheat 5.1875066 3.5791180 2.8392807  
## Oatmeal\_Raisin\_Crisp 4.0959150 5.3748933 5.4883025  
## Post\_Nat.\_Raisin\_Bran 5.4888560 6.7209605 6.5937314  
## Product\_19 5.8601667 4.1451906 3.8141219  
## Puffed\_Rice 6.8815181 6.7130246 6.4171900  
## Puffed\_Wheat 7.0120191 7.0072840 6.6513659  
## Quaker\_Oat\_Squares 4.9590011 4.8388196 4.6780294  
## Raisin\_Bran 4.9361587 5.8772774 5.6001217  
## Raisin\_Nut\_Bran 4.1058469 5.4940281 5.3421181  
## Raisin\_Squares 5.0937699 5.2694187 4.8983300  
## Rice\_Chex 4.7097458 1.2356967 2.0741906  
## Rice\_Krispies 4.6016137 1.4277527 0.8280567  
## Shredded\_Wheat 6.1370672 5.2170523 4.8556542  
## Shredded\_Wheat\_'n'Bran 6.8766245 5.5231085 5.1931675  
## Shredded\_Wheat\_spoon\_size 6.7546621 5.2535991 4.9690820  
## Smacks 2.6723112 5.6595339 5.5609588  
## Special\_K 6.1751723 4.4282593 4.0810890  
## Strawberry\_Fruit\_Wheats 4.6250290 4.7661376 4.5113301  
## Total\_Corn\_Flakes 5.1231516 4.1663071 4.2676918  
## Total\_Raisin\_Bran 6.2718947 7.2655913 7.3405369  
## Total\_Whole\_Grain 5.3333898 4.8827636 4.6751704  
## Triples 4.0841961 2.5652243 2.6791800  
## Trix 0.8118782 4.3902557 4.5533127  
## Wheat\_Chex 4.7867498 3.0948773 3.0786844  
## Wheaties 4.3639795 3.1910529 2.8476938  
## Wheaties\_Honey\_Gold 2.7410507 3.0483899 3.1133048  
## Corn\_Pops Count\_Chocula  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula 2.4022273   
## Cracklin'\_Oat\_Bran 5.1626883 4.9466548  
## Crispix 3.8034693 4.4896191  
## Crispy\_Wheat\_&\_Raisins 3.1985124 2.6950779  
## Double\_Chex 3.6082599 3.9556288  
## Froot\_Loops 1.5591296 2.0674839  
## Frosted\_Flakes 2.2606753 2.7473666  
## Frosted\_Mini-Wheats 3.3961583 4.7584253  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 5.1546944 4.8446236  
## Fruitful\_Bran 4.9257861 5.0252384  
## Fruity\_Pebbles 2.2108193 2.0046193  
## Golden\_Crisp 2.5810506 3.2037546  
## Golden\_Grahams 3.3379341 2.0274380  
## Grape\_Nuts\_Flakes 3.8773303 4.2720296  
## Grape-Nuts 5.2019816 5.6588755  
## Great\_Grains\_Pecan 5.5258013 5.4985124  
## Honey\_Graham\_Ohs 3.1452293 1.9838818  
## Honey\_Nut\_Cheerios 3.8462931 2.9455289  
## Honey-comb 2.7798769 2.7936910  
## Just\_Right\_Crunchy\_\_Nuggets 4.4015941 4.6490522  
## Just\_Right\_Fruit\_&\_Nut 5.5614335 5.7407360  
## Kix 4.6225145 4.2981103  
## Life 4.4916489 4.3837420  
## Lucky\_Charms 2.4348957 1.0159361  
## Maypo 4.7108675 5.3484633  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.5260821 5.1901222  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 5.5734921 5.0607408  
## Mueslix\_Crispy\_Blend 5.8908146 5.7273458  
## Multi-Grain\_Cheerios 3.4598451 2.9870463  
## Nut&Honey\_Crunch 2.5857408 2.6345750  
## Nutri-Grain\_Almond-Raisin 5.4309169 5.3725742  
## Nutri-grain\_Wheat 4.3435732 5.1883314  
## Oatmeal\_Raisin\_Crisp 4.7866005 4.0699967  
## Post\_Nat.\_Raisin\_Bran 5.7678555 5.4207061  
## Product\_19 5.7041680 5.8708298  
## Puffed\_Rice 6.0929460 6.9040765  
## Puffed\_Wheat 6.2595824 7.0248004  
## Quaker\_Oat\_Squares 4.7446975 4.9482983  
## Raisin\_Bran 5.0036266 4.8689522  
## Raisin\_Nut\_Bran 4.5937694 4.0741443  
## Raisin\_Squares 3.9298436 5.0853270  
## Rice\_Chex 4.4542388 4.7295051  
## Rice\_Krispies 4.3179498 4.6191439  
## Shredded\_Wheat 5.1125527 6.1385593  
## Shredded\_Wheat\_'n'Bran 5.9014010 6.8664885  
## Shredded\_Wheat\_spoon\_size 5.7719372 6.7498157  
## Smacks 2.1791607 2.6927264  
## Special\_K 5.7524851 6.1853189  
## Strawberry\_Fruit\_Wheats 3.4675164 4.6258500  
## Total\_Corn\_Flakes 5.2616359 5.1383252  
## Total\_Raisin\_Bran 6.7212070 6.2193798  
## Total\_Whole\_Grain 5.4342339 5.3225147  
## Triples 4.4435953 4.0911800  
## Trix 1.9631662 0.9035422  
## Wheat\_Chex 4.7233636 4.7736762  
## Wheaties 4.3982391 4.3526386  
## Wheaties\_Honey\_Gold 3.2399387 2.7496145  
## Cracklin'\_Oat\_Bran Crispix  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix 5.3958333   
## Crispy\_Wheat\_&\_Raisins 3.1338088 4.1045135  
## Double\_Chex 4.5612931 2.2013597  
## Froot\_Loops 4.3063029 4.1550811  
## Frosted\_Flakes 4.8431452 3.4451824  
## Frosted\_Mini-Wheats 4.3798018 4.1595929  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 2.7752583 5.3656648  
## Fruitful\_Bran 4.2967659 4.8225607  
## Fruity\_Pebbles 4.6450334 4.3013688  
## Golden\_Crisp 5.2033297 4.9033543  
## Golden\_Grahams 4.9002828 3.8334019  
## Grape\_Nuts\_Flakes 3.5547869 3.0503930  
## Grape-Nuts 4.2667925 4.0024845  
## Great\_Grains\_Pecan 2.3434154 5.3930954  
## Honey\_Graham\_Ohs 4.5993234 4.5830918  
## Honey\_Nut\_Cheerios 3.7343313 4.2041605  
## Honey-comb 6.1152132 3.9382153  
## Just\_Right\_Crunchy\_\_Nuggets 5.2580537 3.8631472  
## Just\_Right\_Fruit\_&\_Nut 5.5717464 4.9285267  
## Kix 6.5832740 3.1948740  
## Life 2.9323953 4.6018405  
## Lucky\_Charms 4.5822238 4.1460336  
## Maypo 5.1246498 4.5546404  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 3.8970772 5.5464730  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 3.8797724 5.4351161  
## Mueslix\_Crispy\_Blend 4.9308844 6.0179892  
## Multi-Grain\_Cheerios 4.2258742 3.0351302  
## Nut&Honey\_Crunch 3.9954213 3.3549959  
## Nutri-Grain\_Almond-Raisin 4.2062267 4.1703058  
## Nutri-grain\_Wheat 4.8044517 2.2615008  
## Oatmeal\_Raisin\_Crisp 3.1562408 4.9665346  
## Post\_Nat.\_Raisin\_Bran 4.1500975 6.2388661  
## Product\_19 6.4260119 3.7620673  
## Puffed\_Rice 7.4089729 6.0696216  
## Puffed\_Wheat 7.0162398 6.3203428  
## Quaker\_Oat\_Squares 3.1260941 4.1759665  
## Raisin\_Bran 4.0608385 5.4007127  
## Raisin\_Nut\_Bran 1.9429698 4.9139776  
## Raisin\_Squares 4.1983501 4.1516814  
## Rice\_Chex 6.5964087 2.4156487  
## Rice\_Krispies 5.9758599 1.7777305  
## Shredded\_Wheat 5.9800702 4.6684572  
## Shredded\_Wheat\_'n'Bran 5.6936198 4.9701504  
## Shredded\_Wheat\_spoon\_size 5.7894504 4.7331692  
## Smacks 4.1127347 5.0742328  
## Special\_K 5.6656319 4.2204065  
## Strawberry\_Fruit\_Wheats 5.1343914 3.9905687  
## Total\_Corn\_Flakes 6.1507043 3.8557341  
## Total\_Raisin\_Bran 6.3994766 6.9387838  
## Total\_Whole\_Grain 5.1599096 4.3687444  
## Triples 4.8225053 2.2136488  
## Trix 4.9982059 4.1604162  
## Wheat\_Chex 3.8724587 3.3611346  
## Wheaties 4.3128510 3.0473516  
## Wheaties\_Honey\_Gold 4.0626575 3.1460231  
## Crispy\_Wheat\_&\_Raisins Double\_Chex  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex 2.9544611   
## Froot\_Loops 2.7835016 3.8508934  
## Frosted\_Flakes 3.0590291 3.0870711  
## Frosted\_Mini-Wheats 3.5453775 3.6336450  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 3.2683239 4.4800030  
## Fruitful\_Bran 3.8078325 4.2202776  
## Fruity\_Pebbles 2.9001922 3.5913413  
## Golden\_Crisp 3.1437313 4.0961424  
## Golden\_Grahams 3.1090235 3.3580701  
## Grape\_Nuts\_Flakes 2.6903908 2.4707498  
## Grape-Nuts 3.9422976 3.0113755  
## Great\_Grains\_Pecan 3.8075350 4.5098411  
## Honey\_Graham\_Ohs 3.3723906 4.2613035  
## Honey\_Nut\_Cheerios 2.2923125 3.4191175  
## Honey-comb 3.9292855 3.9931588  
## Just\_Right\_Crunchy\_\_Nuggets 4.3512916 4.0309427  
## Just\_Right\_Fruit\_&\_Nut 5.2654765 4.9747210  
## Kix 5.0659625 4.1838507  
## Life 3.1670466 3.7948116  
## Lucky\_Charms 2.4214972 3.6335188  
## Maypo 4.4997433 4.2530678  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.4212235 5.0833438  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.3911958 5.0021135  
## Mueslix\_Crispy\_Blend 5.2209467 5.7714487  
## Multi-Grain\_Cheerios 2.4930096 2.6777646  
## Nut&Honey\_Crunch 2.9594727 3.0160150  
## Nutri-Grain\_Almond-Raisin 4.5782248 4.2186887  
## Nutri-grain\_Wheat 3.8871236 2.5819312  
## Oatmeal\_Raisin\_Crisp 2.9443963 4.1141531  
## Post\_Nat.\_Raisin\_Bran 4.0779090 5.2953946  
## Product\_19 5.5120591 4.3048641  
## Puffed\_Rice 6.1265455 5.7300872  
## Puffed\_Wheat 5.9438716 5.8406962  
## Quaker\_Oat\_Squares 2.9906307 3.0990126  
## Raisin\_Bran 4.0587972 4.8101475  
## Raisin\_Nut\_Bran 1.8405920 3.7008006  
## Raisin\_Squares 3.3178387 3.2029975  
## Rice\_Chex 5.0502226 2.9835676  
## Rice\_Krispies 4.7365061 2.9582093  
## Shredded\_Wheat 4.9900218 4.3706604  
## Shredded\_Wheat\_'n'Bran 5.2947318 4.4725846  
## Shredded\_Wheat\_spoon\_size 5.2849277 4.2959580  
## Smacks 2.8491045 4.3752963  
## Special\_K 5.2983665 4.5198829  
## Strawberry\_Fruit\_Wheats 3.7546842 3.5059725  
## Total\_Corn\_Flakes 4.9556138 4.1506820  
## Total\_Raisin\_Bran 5.7996598 6.5653118  
## Total\_Whole\_Grain 4.3369305 4.2035018  
## Triples 3.5556881 2.2269206  
## Trix 2.7486850 3.7405169  
## Wheat\_Chex 3.4976016 2.3562519  
## Wheaties 3.2965099 2.8973282  
## Wheaties\_Honey\_Gold 2.3510637 2.5316224  
## Froot\_Loops Frosted\_Flakes  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes 2.5708419   
## Frosted\_Mini-Wheats 3.5664061 4.2324102  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 4.5056198 4.9248197  
## Fruitful\_Bran 4.6349470 4.3986316  
## Fruity\_Pebbles 2.1410978 2.4395038  
## Golden\_Crisp 2.6232729 2.9418230  
## Golden\_Grahams 3.1571973 2.5967015  
## Grape\_Nuts\_Flakes 3.6224785 3.8791513  
## Grape-Nuts 5.2518113 4.4737609  
## Great\_Grains\_Pecan 4.9629824 5.2477548  
## Honey\_Graham\_Ohs 2.5071173 3.1923973  
## Honey\_Nut\_Cheerios 3.0863428 2.8560671  
## Honey-comb 3.0484489 2.8878947  
## Just\_Right\_Crunchy\_\_Nuggets 4.3407438 4.3253900  
## Just\_Right\_Fruit\_&\_Nut 5.3856129 5.2784827  
## Kix 4.6332016 4.8608369  
## Life 3.6438864 4.4901805  
## Lucky\_Charms 1.7340662 2.7950289  
## Maypo 4.5297737 5.4352611  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.7078434 5.7225383  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.6924653 5.6013542  
## Mueslix\_Crispy\_Blend 5.4141171 5.6544521  
## Multi-Grain\_Cheerios 3.2264647 2.8394328  
## Nut&Honey\_Crunch 2.2239077 2.1765713  
## Nutri-Grain\_Almond-Raisin 5.0571539 4.8863298  
## Nutri-grain\_Wheat 4.4704150 4.3138554  
## Oatmeal\_Raisin\_Crisp 4.1077684 4.2711492  
## Post\_Nat.\_Raisin\_Bran 5.2465679 5.4739795  
## Product\_19 5.6627198 5.1568717  
## Puffed\_Rice 6.5317769 6.5554636  
## Puffed\_Wheat 6.4918723 6.7422757  
## Quaker\_Oat\_Squares 4.2850669 4.3979020  
## Raisin\_Bran 4.5084792 4.8607739  
## Raisin\_Nut\_Bran 3.8789105 4.2369276  
## Raisin\_Squares 4.3101412 4.0906239  
## Rice\_Chex 4.9616517 3.8968246  
## Rice\_Krispies 4.5543337 3.3731322  
## Shredded\_Wheat 5.5403647 5.4555543  
## Shredded\_Wheat\_'n'Bran 6.2044763 5.9389662  
## Shredded\_Wheat\_spoon\_size 6.1046957 5.7960357  
## Smacks 1.4372896 2.9757524  
## Special\_K 5.2612920 5.3906059  
## Strawberry\_Fruit\_Wheats 3.9160275 4.4094785  
## Total\_Corn\_Flakes 5.3293644 5.0363094  
## Total\_Raisin\_Bran 6.3541512 6.6546968  
## Total\_Whole\_Grain 5.2139116 5.2977959  
## Triples 4.4566930 3.6785518  
## Trix 1.8680519 2.6447376  
## Wheat\_Chex 4.4738576 3.8612104  
## Wheaties 4.1763271 3.9957433  
## Wheaties\_Honey\_Gold 3.0285107 2.2241309  
## Frosted\_Mini-Wheats  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats 4.5397995  
## Fruitful\_Bran 4.6355748  
## Fruity\_Pebbles 4.2548004  
## Golden\_Crisp 3.7674864  
## Golden\_Grahams 5.1628076  
## Grape\_Nuts\_Flakes 2.9126380  
## Grape-Nuts 3.9368280  
## Great\_Grains\_Pecan 4.4752970  
## Honey\_Graham\_Ohs 5.2294287  
## Honey\_Nut\_Cheerios 4.4129911  
## Honey-comb 5.0159932  
## Just\_Right\_Crunchy\_\_Nuggets 4.9420822  
## Just\_Right\_Fruit\_&\_Nut 5.6254944  
## Kix 5.5651138  
## Life 3.4279407  
## Lucky\_Charms 4.2594297  
## Maypo 3.0456589  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.1472084  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 5.3992379  
## Mueslix\_Crispy\_Blend 6.0409987  
## Multi-Grain\_Cheerios 3.9538909  
## Nut&Honey\_Crunch 3.8816104  
## Nutri-Grain\_Almond-Raisin 5.1963261  
## Nutri-grain\_Wheat 3.0972397  
## Oatmeal\_Raisin\_Crisp 4.8609599  
## Post\_Nat.\_Raisin\_Bran 5.3579864  
## Product\_19 5.9098643  
## Puffed\_Rice 5.6611858  
## Puffed\_Wheat 5.3606136  
## Quaker\_Oat\_Squares 3.2817070  
## Raisin\_Bran 4.5671829  
## Raisin\_Nut\_Bran 3.9260382  
## Raisin\_Squares 2.2567039  
## Rice\_Chex 5.3484866  
## Rice\_Krispies 5.0160869  
## Shredded\_Wheat 3.5255641  
## Shredded\_Wheat\_'n'Bran 3.4430249  
## Shredded\_Wheat\_spoon\_size 3.4513859  
## Smacks 3.6075420  
## Special\_K 4.5607337  
## Strawberry\_Fruit\_Wheats 2.0426612  
## Total\_Corn\_Flakes 5.6888327  
## Total\_Raisin\_Bran 6.9030139  
## Total\_Whole\_Grain 4.9680607  
## Triples 4.8041852  
## Trix 4.3661453  
## Wheat\_Chex 3.8555476  
## Wheaties 3.6376965  
## Wheaties\_Honey\_Gold 3.9745907  
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran 2.7652541  
## Fruity\_Pebbles 4.5860373  
## Golden\_Crisp 4.9094457  
## Golden\_Grahams 4.9741540  
## Grape\_Nuts\_Flakes 3.3713073  
## Grape-Nuts 4.2604437  
## Great\_Grains\_Pecan 3.3957329  
## Honey\_Graham\_Ohs 4.6902276  
## Honey\_Nut\_Cheerios 3.7678213  
## Honey-comb 5.5637498  
## Just\_Right\_Crunchy\_\_Nuggets 5.4100040  
## Just\_Right\_Fruit\_&\_Nut 4.8642696  
## Kix 6.3176192  
## Life 3.6356245  
## Lucky\_Charms 4.5224032  
## Maypo 5.3189252  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 3.6619824  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 3.6012029  
## Mueslix\_Crispy\_Blend 3.5253486  
## Multi-Grain\_Cheerios 4.1698800  
## Nut&Honey\_Crunch 4.3875365  
## Nutri-Grain\_Almond-Raisin 3.3603288  
## Nutri-grain\_Wheat 4.8452808  
## Oatmeal\_Raisin\_Crisp 2.6178753  
## Post\_Nat.\_Raisin\_Bran 1.8261789  
## Product\_19 6.3987411  
## Puffed\_Rice 8.4318250  
## Puffed\_Wheat 8.0817171  
## Quaker\_Oat\_Squares 3.5720020  
## Raisin\_Bran 2.5584312  
## Raisin\_Nut\_Bran 2.8977849  
## Raisin\_Squares 4.6523364  
## Rice\_Chex 6.3582260  
## Rice\_Krispies 5.9164585  
## Shredded\_Wheat 6.3487323  
## Shredded\_Wheat\_'n'Bran 5.7431151  
## Shredded\_Wheat\_spoon\_size 5.8725355  
## Smacks 4.5015577  
## Special\_K 5.7104411  
## Strawberry\_Fruit\_Wheats 5.0504799  
## Total\_Corn\_Flakes 6.1559315  
## Total\_Raisin\_Bran 4.7563704  
## Total\_Whole\_Grain 5.1248701  
## Triples 4.9152221  
## Trix 4.9879592  
## Wheat\_Chex 4.0151175  
## Wheaties 4.2370673  
## Wheaties\_Honey\_Gold 4.1370355  
## Fruitful\_Bran Fruity\_Pebbles  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles 5.0642742   
## Golden\_Crisp 5.1790901 2.5765662  
## Golden\_Grahams 4.9150821 2.4447567  
## Grape\_Nuts\_Flakes 4.1260405 3.7479284  
## Grape-Nuts 4.3674580 4.6984432  
## Great\_Grains\_Pecan 5.2348985 4.5807077  
## Honey\_Graham\_Ohs 5.2090832 2.4455680  
## Honey\_Nut\_Cheerios 3.8985524 3.3191726  
## Honey-comb 5.5280216 3.0785981  
## Just\_Right\_Crunchy\_\_Nuggets 5.4224802 4.6061432  
## Just\_Right\_Fruit\_&\_Nut 4.5246440 5.5487918  
## Kix 6.2799890 4.9437485  
## Life 4.6061966 4.0375695  
## Lucky\_Charms 4.7329835 2.1302921  
## Maypo 5.9508885 5.0300676  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.9837387 5.2848737  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.8077728 5.2438049  
## Mueslix\_Crispy\_Blend 3.5366714 5.6442147  
## Multi-Grain\_Cheerios 4.3588277 3.4233351  
## Nut&Honey\_Crunch 4.3292273 2.1155541  
## Nutri-Grain\_Almond-Raisin 3.3120050 5.1582971  
## Nutri-grain\_Wheat 4.5100088 5.0124534  
## Oatmeal\_Raisin\_Crisp 3.4003183 3.9817157  
## Post\_Nat.\_Raisin\_Bran 2.2850838 5.3995637  
## Product\_19 5.7796502 5.8995429  
## Puffed\_Rice 8.8752634 6.5445158  
## Puffed\_Wheat 8.5975695 6.7332871  
## Quaker\_Oat\_Squares 4.0853600 4.4248306  
## Raisin\_Bran 1.9355462 5.0321931  
## Raisin\_Nut\_Bran 4.0975496 3.9330577  
## Raisin\_Squares 4.7447048 4.3261625  
## Rice\_Chex 6.0094803 4.6964331  
## Rice\_Krispies 5.2534279 4.5728456  
## Shredded\_Wheat 6.7272848 5.7703129  
## Shredded\_Wheat\_'n'Bran 6.0131730 6.3053527  
## Shredded\_Wheat\_spoon\_size 6.1089679 6.1492937  
## Smacks 4.7831642 2.2973977  
## Special\_K 5.3156534 6.1185417  
## Strawberry\_Fruit\_Wheats 5.3058336 4.2773839  
## Total\_Corn\_Flakes 6.2292236 5.1985459  
## Total\_Raisin\_Bran 4.5189593 6.6942458  
## Total\_Whole\_Grain 5.3650113 5.5099246  
## Triples 4.8988429 4.0187345  
## Trix 5.2324344 1.7688701  
## Wheat\_Chex 4.2062148 4.4733935  
## Wheaties 4.4947468 4.5344785  
## Wheaties\_Honey\_Gold 4.2887063 2.7693657  
## Golden\_Crisp Golden\_Grahams  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams 4.2533718   
## Grape\_Nuts\_Flakes 3.8548420 4.1984534  
## Grape-Nuts 5.1180407 4.8209361  
## Great\_Grains\_Pecan 5.2707787 5.2094957  
## Honey\_Graham\_Ohs 4.0678838 2.4258592  
## Honey\_Nut\_Cheerios 3.5839335 2.7392415  
## Honey-comb 3.0131854 3.5945735  
## Just\_Right\_Crunchy\_\_Nuggets 5.0985523 4.5657936  
## Just\_Right\_Fruit\_&\_Nut 6.0144100 5.5039111  
## Kix 5.7591658 4.0660590  
## Life 4.4645939 4.2658927  
## Lucky\_Charms 3.0187283 2.1400917  
## Maypo 4.7727085 5.6525733  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.5420746 5.6327578  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 5.6521872 5.3701849  
## Mueslix\_Crispy\_Blend 6.1714870 5.7863232  
## Multi-Grain\_Cheerios 3.7859540 2.7704781  
## Nut&Honey\_Crunch 3.6000149 2.1472506  
## Nutri-Grain\_Almond-Raisin 6.0024973 4.7960504  
## Nutri-grain\_Wheat 4.9837586 4.8969135  
## Oatmeal\_Raisin\_Crisp 4.7045844 3.8643651  
## Post\_Nat.\_Raisin\_Bran 5.4446793 5.6648088  
## Product\_19 6.3858575 5.1650995  
## Puffed\_Rice 6.2593093 7.0863169  
## Puffed\_Wheat 6.2282346 7.3029074  
## Quaker\_Oat\_Squares 4.4463234 4.6520610  
## Raisin\_Bran 5.3981264 4.9629267  
## Raisin\_Nut\_Bran 4.2984656 4.0269553  
## Raisin\_Squares 4.0213855 5.1457085  
## Rice\_Chex 5.3334952 4.0434089  
## Rice\_Krispies 5.1952303 3.6831285  
## Shredded\_Wheat 5.2159435 6.2907138  
## Shredded\_Wheat\_'n'Bran 5.8358337 6.7194351  
## Shredded\_Wheat\_spoon\_size 5.7113468 6.5597740  
## Smacks 2.4803974 3.7454003  
## Special\_K 5.6921513 5.8817755  
## Strawberry\_Fruit\_Wheats 3.9931966 5.0438063  
## Total\_Corn\_Flakes 5.8800362 4.6561255  
## Total\_Raisin\_Bran 6.8136088 6.5541551  
## Total\_Whole\_Grain 5.7732987 5.1061250  
## Triples 5.1004812 2.9155945  
## Trix 2.9578862 2.2096159  
## Wheat\_Chex 4.8290852 4.0354408  
## Wheaties 4.6298238 4.0276705  
## Wheaties\_Honey\_Gold 3.3963511 2.2159882  
## Grape\_Nuts\_Flakes Grape-Nuts  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts 3.0005517   
## Great\_Grains\_Pecan 3.4034808 3.4617907  
## Honey\_Graham\_Ohs 4.3327664 5.7693981  
## Honey\_Nut\_Cheerios 3.3282311 4.2313216  
## Honey-comb 4.1629519 5.9699652  
## Just\_Right\_Crunchy\_\_Nuggets 4.1444054 5.2977835  
## Just\_Right\_Fruit\_&\_Nut 5.0555972 5.3876352  
## Kix 4.4156533 6.2653860  
## Life 2.7797774 3.8633172  
## Lucky\_Charms 3.7089459 5.2231509  
## Maypo 3.4426985 4.9052447  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.2714797 5.7268478  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.2970774 5.7073474  
## Mueslix\_Crispy\_Blend 5.5421754 5.9234534  
## Multi-Grain\_Cheerios 2.6481911 4.2889106  
## Nut&Honey\_Crunch 3.5082487 4.0395387  
## Nutri-Grain\_Almond-Raisin 4.1295458 4.4080959  
## Nutri-grain\_Wheat 2.2348376 3.6685224  
## Oatmeal\_Raisin\_Crisp 3.8889159 4.1664500  
## Post\_Nat.\_Raisin\_Bran 4.5758749 5.1408304  
## Product\_19 4.7666010 5.4196566  
## Puffed\_Rice 5.6798722 6.7289798  
## Puffed\_Wheat 5.4494466 6.5884590  
## Quaker\_Oat\_Squares 2.4317380 2.6079819  
## Raisin\_Bran 4.4276833 5.0624427  
## Raisin\_Nut\_Bran 2.9695446 3.6125039  
## Raisin\_Squares 3.1568185 3.1984951  
## Rice\_Chex 4.3163526 5.2387423  
## Rice\_Krispies 3.9745902 4.6592364  
## Shredded\_Wheat 3.8986163 5.0639770  
## Shredded\_Wheat\_'n'Bran 3.9804390 4.1633169  
## Shredded\_Wheat\_spoon\_size 3.9425467 4.1025174  
## Smacks 4.1313305 5.2231754  
## Special\_K 3.9497804 4.8391130  
## Strawberry\_Fruit\_Wheats 2.9864689 4.4908316  
## Total\_Corn\_Flakes 4.5526925 5.4484901  
## Total\_Raisin\_Bran 6.3280796 7.1564136  
## Total\_Whole\_Grain 3.8277524 5.0186782  
## Triples 3.2073369 3.6173896  
## Trix 4.0081476 5.4518630  
## Wheat\_Chex 2.5800055 3.0216519  
## Wheaties 2.3205328 3.9485910  
## Wheaties\_Honey\_Gold 2.9282683 3.7712858  
## Great\_Grains\_Pecan Honey\_Graham\_Ohs  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs 5.1409207   
## Honey\_Nut\_Cheerios 4.4038907 3.3011348  
## Honey-comb 6.3791383 3.3297809  
## Just\_Right\_Crunchy\_\_Nuggets 5.5210693 4.6784286  
## Just\_Right\_Fruit\_&\_Nut 5.6359651 5.6811729  
## Kix 6.7412044 4.3887447  
## Life 3.1970198 4.0304785  
## Lucky\_Charms 5.0960910 2.1681613  
## Maypo 4.8296340 5.6087952  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.2210996 4.8332364  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.3462626 4.6233820  
## Mueslix\_Crispy\_Blend 5.2752811 5.5093657  
## Multi-Grain\_Cheerios 4.6694922 3.3223335  
## Nut&Honey\_Crunch 4.2345547 2.6928006  
## Nutri-Grain\_Almond-Raisin 4.3347838 5.0166732  
## Nutri-grain\_Wheat 5.0411330 5.3870778  
## Oatmeal\_Raisin\_Crisp 3.3623338 4.1191257  
## Post\_Nat.\_Raisin\_Bran 5.0410086 5.5118581  
## Product\_19 6.6871286 5.8945332  
## Puffed\_Rice 7.2459925 7.1968234  
## Puffed\_Wheat 7.0058341 7.3093048  
## Quaker\_Oat\_Squares 3.0671881 4.8788421  
## Raisin\_Bran 5.1616484 4.9350086  
## Raisin\_Nut\_Bran 2.6352114 4.2804228  
## Raisin\_Squares 4.0613161 5.5916334  
## Rice\_Chex 6.4401967 4.8048569  
## Rice\_Krispies 6.0611401 4.6597954  
## Shredded\_Wheat 5.7607099 6.4762197  
## Shredded\_Wheat\_'n'Bran 5.2155375 7.1380171  
## Shredded\_Wheat\_spoon\_size 5.2133318 7.0381128  
## Smacks 4.7057401 3.2248409  
## Special\_K 5.8734993 6.2627278  
## Strawberry\_Fruit\_Wheats 5.0893965 5.0931660  
## Total\_Corn\_Flakes 5.9699015 5.2771588  
## Total\_Raisin\_Bran 7.0339795 6.4164713  
## Total\_Whole\_Grain 5.4138021 5.4681157  
## Triples 4.5898502 4.2190493  
## Trix 5.2941626 2.1722920  
## Wheat\_Chex 3.9728198 4.6973701  
## Wheaties 4.5409719 4.5324279  
## Wheaties\_Honey\_Gold 4.1744097 3.1469484  
## Honey\_Nut\_Cheerios Honey-comb  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb 3.8328249   
## Just\_Right\_Crunchy\_\_Nuggets 4.6316443 4.6534053  
## Just\_Right\_Fruit\_&\_Nut 5.2325284 6.0188679  
## Kix 4.7707240 3.8043343  
## Life 3.1011814 5.3218239  
## Lucky\_Charms 2.3777449 2.8683344  
## Maypo 4.9538553 5.4328713  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.5539454 5.7891868  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.3072323 5.6904794  
## Mueslix\_Crispy\_Blend 5.2310932 6.4656010  
## Multi-Grain\_Cheerios 2.1170838 3.1013874  
## Nut&Honey\_Crunch 2.7399953 3.7746004  
## Nutri-Grain\_Almond-Raisin 4.4440566 5.8753237  
## Nutri-grain\_Wheat 4.3297747 4.7695481  
## Oatmeal\_Raisin\_Crisp 3.0268861 5.4214425  
## Post\_Nat.\_Raisin\_Bran 4.4331480 6.0759360  
## Product\_19 5.1715520 5.5326527  
## Puffed\_Rice 7.1484267 6.5900031  
## Puffed\_Wheat 6.9332486 6.7952239  
## Quaker\_Oat\_Squares 3.3580726 5.5693790  
## Raisin\_Bran 4.0795185 5.7223873  
## Raisin\_Nut\_Bran 2.7302425 5.4258398  
## Raisin\_Squares 4.6771614 5.4571650  
## Rice\_Chex 4.7814619 3.7085956  
## Rice\_Krispies 4.0631957 3.8591753  
## Shredded\_Wheat 5.7332250 5.5789675  
## Shredded\_Wheat\_'n'Bran 5.8822328 6.6222934  
## Shredded\_Wheat\_spoon\_size 5.8253887 6.4707680  
## Smacks 3.4441335 4.0460670  
## Special\_K 4.3149820 5.7296001  
## Strawberry\_Fruit\_Wheats 4.7564780 4.5464399  
## Total\_Corn\_Flakes 5.0497714 5.1290431  
## Total\_Raisin\_Bran 5.8755902 6.7435067  
## Total\_Whole\_Grain 4.5467395 5.4723181  
## Triples 3.5059588 4.4602165  
## Trix 3.1601226 2.7062048  
## Wheat\_Chex 3.0478769 4.8907095  
## Wheaties 2.9867251 4.2403459  
## Wheaties\_Honey\_Gold 1.7694946 3.3581734  
## Just\_Right\_Crunchy\_\_Nuggets  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut 3.0952147  
## Kix 4.7766465  
## Life 4.9487804  
## Lucky\_Charms 4.4202610  
## Maypo 5.2825083  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.4842184  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 5.4167257  
## Mueslix\_Crispy\_Blend 6.1321043  
## Multi-Grain\_Cheerios 4.0761012  
## Nut&Honey\_Crunch 4.0985536  
## Nutri-Grain\_Almond-Raisin 5.0258006  
## Nutri-grain\_Wheat 4.3203700  
## Oatmeal\_Raisin\_Crisp 5.0927023  
## Post\_Nat.\_Raisin\_Bran 6.2550933  
## Product\_19 2.5743625  
## Puffed\_Rice 7.3795775  
## Puffed\_Wheat 7.4698629  
## Quaker\_Oat\_Squares 4.8810020  
## Raisin\_Bran 5.6675281  
## Raisin\_Nut\_Bran 4.9760394  
## Raisin\_Squares 4.9765171  
## Rice\_Chex 4.6805600  
## Rice\_Krispies 4.3482416  
## Shredded\_Wheat 6.3897885  
## Shredded\_Wheat\_'n'Bran 6.7410284  
## Shredded\_Wheat\_spoon\_size 6.6130950  
## Smacks 4.9610503  
## Special\_K 5.5316189  
## Strawberry\_Fruit\_Wheats 4.9650820  
## Total\_Corn\_Flakes 1.9958393  
## Total\_Raisin\_Bran 5.2025517  
## Total\_Whole\_Grain 2.3429339  
## Triples 4.1364634  
## Trix 4.4797467  
## Wheat\_Chex 4.6444220  
## Wheaties 4.4013278  
## Wheaties\_Honey\_Gold 4.1049229  
## Just\_Right\_Fruit\_&\_Nut Kix  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix 6.0728478   
## Life 5.5068955 5.3061191  
## Lucky\_Charms 5.4415418 3.9854338  
## Maypo 6.0629029 5.0563909  
## Muesli\_Raisins,\_Dates,\_&\_Almonds 5.1681665 5.8203538  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 5.0963343 5.6372346  
## Mueslix\_Crispy\_Blend 4.2228546 6.9360513  
## Multi-Grain\_Cheerios 5.2682365 3.3196643  
## Nut&Honey\_Crunch 4.7271470 4.4811067  
## Nutri-Grain\_Almond-Raisin 3.6882215 5.4215184  
## Nutri-grain\_Wheat 5.4171258 4.1639631  
## Oatmeal\_Raisin\_Crisp 4.3568224 5.9198222  
## Post\_Nat.\_Raisin\_Bran 5.4253750 7.1703437  
## Product\_19 3.9967138 4.7658968  
## Puffed\_Rice 9.5976376 6.9579544  
## Puffed\_Wheat 9.5962863 7.2038624  
## Quaker\_Oat\_Squares 5.2087136 5.8215082  
## Raisin\_Bran 4.8179136 6.1604223  
## Raisin\_Nut\_Bran 5.4733129 5.9879448  
## Raisin\_Squares 5.7148074 6.2999718  
## Rice\_Chex 5.8338195 2.9577195  
## Rice\_Krispies 5.3051893 3.1140322  
## Shredded\_Wheat 7.7751717 5.7141849  
## Shredded\_Wheat\_'n'Bran 7.2358426 6.4919473  
## Shredded\_Wheat\_spoon\_size 7.1324017 6.2813248  
## Smacks 5.7049101 5.9140223  
## Special\_K 5.8897133 5.1271304  
## Strawberry\_Fruit\_Wheats 6.1074428 4.8925621  
## Total\_Corn\_Flakes 3.6900486 4.2834352  
## Total\_Raisin\_Bran 3.5317347 7.1787187  
## Total\_Whole\_Grain 3.8517948 4.8885513  
## Triples 4.9138031 3.4954524  
## Trix 5.6471472 4.0827529  
## Wheat\_Chex 5.2424985 4.6820444  
## Wheaties 5.3221346 3.5329649  
## Wheaties\_Honey\_Gold 4.8934106 3.9891049  
## Life Lucky\_Charms Maypo  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms 3.6657221   
## Maypo 3.5919885 4.7001187   
## Muesli\_Raisins,\_Dates,\_&\_Almonds 4.2118263 4.7268788 5.0225041  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 4.1943826 4.5988198 5.2704092  
## Mueslix\_Crispy\_Blend 5.5689716 5.5143344 6.6044027  
## Multi-Grain\_Cheerios 3.4431930 2.6094229 4.3417369  
## Nut&Honey\_Crunch 3.3537915 2.3222545 4.6280633  
## Nutri-Grain\_Almond-Raisin 4.4937146 5.0261092 5.5544877  
## Nutri-grain\_Wheat 3.9391674 4.6685834 3.7807051  
## Oatmeal\_Raisin\_Crisp 3.5587880 3.6998930 5.2944683  
## Post\_Nat.\_Raisin\_Bran 4.8703745 5.2116418 6.4297943  
## Product\_19 5.6344538 5.4834956 6.0616482  
## Puffed\_Rice 6.5052937 6.7410092 5.9590115  
## Puffed\_Wheat 6.0986199 6.7405419 5.6949421  
## Quaker\_Oat\_Squares 1.9842500 4.3106134 3.8429334  
## Raisin\_Bran 4.2658101 4.5968718 5.6808429  
## Raisin\_Nut\_Bran 2.5227249 3.6310467 4.5996017  
## Raisin\_Squares 4.0752655 4.8120695 4.0574434  
## Rice\_Chex 5.6014970 4.6086530 5.3569012  
## Rice\_Krispies 5.0066513 4.3206952 5.2060581  
## Shredded\_Wheat 5.0924766 5.8066974 4.1060439  
## Shredded\_Wheat\_'n'Bran 4.9125101 6.4312354 4.1799852  
## Shredded\_Wheat\_spoon\_size 4.8839778 6.3060396 4.0180896  
## Smacks 3.7927007 2.5053244 4.8958371  
## Special\_K 4.1083164 5.3107028 4.3499503  
## Strawberry\_Fruit\_Wheats 4.0123252 4.2815307 3.2629531  
## Total\_Corn\_Flakes 5.4563626 4.8795585 5.5258321  
## Total\_Raisin\_Bran 6.6135786 6.0618315 7.3771593  
## Total\_Whole\_Grain 4.6094044 4.8951922 5.0929175  
## Triples 4.1490805 3.7726978 4.8074127  
## Trix 4.2634221 1.1610501 4.9448974  
## Wheat\_Chex 3.0430125 4.2782952 4.2841596  
## Wheaties 3.2732349 3.7897070 3.7947283  
## Wheaties\_Honey\_Gold 3.3588699 2.3897099 4.4913357  
## Muesli\_Raisins,\_Dates,\_&\_Almonds  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans 0.6979696  
## Mueslix\_Crispy\_Blend 4.2024691  
## Multi-Grain\_Cheerios 4.7856295  
## Nut&Honey\_Crunch 4.7330912  
## Nutri-Grain\_Almond-Raisin 3.9808901  
## Nutri-grain\_Wheat 5.4843705  
## Oatmeal\_Raisin\_Crisp 3.7967616  
## Post\_Nat.\_Raisin\_Bran 4.7500900  
## Product\_19 6.7164315  
## Puffed\_Rice 8.5647963  
## Puffed\_Wheat 8.2834935  
## Quaker\_Oat\_Squares 4.5024368  
## Raisin\_Bran 4.5578272  
## Raisin\_Nut\_Bran 4.2095700  
## Raisin\_Squares 5.7657027  
## Rice\_Chex 6.2564482  
## Rice\_Krispies 6.0756046  
## Shredded\_Wheat 6.7066363  
## Shredded\_Wheat\_'n'Bran 6.4659782  
## Shredded\_Wheat\_spoon\_size 6.4652791  
## Smacks 4.9981046  
## Special\_K 5.5712314  
## Strawberry\_Fruit\_Wheats 5.6704467  
## Total\_Corn\_Flakes 6.0485840  
## Total\_Raisin\_Bran 5.6672230  
## Total\_Whole\_Grain 5.5344465  
## Triples 5.2035133  
## Trix 5.1858111  
## Wheat\_Chex 4.7568694  
## Wheaties 4.6882517  
## Wheaties\_Honey\_Gold 4.6655469  
## Muesli\_Raisins,\_Peaches,\_&\_Pecans  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend 4.1300272  
## Multi-Grain\_Cheerios 4.6338672  
## Nut&Honey\_Crunch 4.5983075  
## Nutri-Grain\_Almond-Raisin 3.7994483  
## Nutri-grain\_Wheat 5.4814449  
## Oatmeal\_Raisin\_Crisp 3.6735314  
## Post\_Nat.\_Raisin\_Bran 4.6245011  
## Product\_19 6.4898244  
## Puffed\_Rice 8.7227938  
## Puffed\_Wheat 8.4508062  
## Quaker\_Oat\_Squares 4.5269731  
## Raisin\_Bran 4.4135083  
## Raisin\_Nut\_Bran 4.1908491  
## Raisin\_Squares 5.9841181  
## Rice\_Chex 6.1196491  
## Rice\_Krispies 5.8628764  
## Shredded\_Wheat 6.9237287  
## Shredded\_Wheat\_'n'Bran 6.7050543  
## Shredded\_Wheat\_spoon\_size 6.7005857  
## Smacks 5.0685149  
## Special\_K 5.4630549  
## Strawberry\_Fruit\_Wheats 5.8823587  
## Total\_Corn\_Flakes 5.9530189  
## Total\_Raisin\_Bran 5.5515017  
## Total\_Whole\_Grain 5.4517102  
## Triples 5.0134722  
## Trix 5.1353347  
## Wheat\_Chex 4.6186991  
## Wheaties 4.6066149  
## Wheaties\_Honey\_Gold 4.5320714  
## Mueslix\_Crispy\_Blend  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios 5.7240851  
## Nut&Honey\_Crunch 4.9269554  
## Nutri-Grain\_Almond-Raisin 2.5760514  
## Nutri-grain\_Wheat 6.3880114  
## Oatmeal\_Raisin\_Crisp 3.0828103  
## Post\_Nat.\_Raisin\_Bran 3.8578243  
## Product\_19 7.1422516  
## Puffed\_Rice 10.4638775  
## Puffed\_Wheat 10.3524262  
## Quaker\_Oat\_Squares 5.4662522  
## Raisin\_Bran 3.4534758  
## Raisin\_Nut\_Bran 5.1936509  
## Raisin\_Squares 6.1942709  
## Rice\_Chex 6.9063791  
## Rice\_Krispies 6.3789257  
## Shredded\_Wheat 8.2304371  
## Shredded\_Wheat\_'n'Bran 7.4069232  
## Shredded\_Wheat\_spoon\_size 7.3841718  
## Smacks 5.4642961  
## Special\_K 6.6659681  
## Strawberry\_Fruit\_Wheats 6.7370856  
## Total\_Corn\_Flakes 6.7671253  
## Total\_Raisin\_Bran 4.3577811  
## Total\_Whole\_Grain 6.6011643  
## Triples 5.7123255  
## Trix 5.8043445  
## Wheat\_Chex 5.7685406  
## Wheaties 5.9274589  
## Wheaties\_Honey\_Gold 5.2468818  
## Multi-Grain\_Cheerios Nut&Honey\_Crunch  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch 3.0472768   
## Nutri-Grain\_Almond-Raisin 4.4068946 3.9932008  
## Nutri-grain\_Wheat 3.1644900 4.2239745  
## Oatmeal\_Raisin\_Crisp 3.9168354 3.3463615  
## Post\_Nat.\_Raisin\_Bran 5.0450709 5.2877153  
## Product\_19 4.6189668 5.0011492  
## Puffed\_Rice 6.1047577 6.8469527  
## Puffed\_Wheat 6.0807914 6.9425572  
## Quaker\_Oat\_Squares 3.6885169 3.6848226  
## Raisin\_Bran 4.4296273 4.3434608  
## Raisin\_Nut\_Bran 3.3723607 3.5610957  
## Raisin\_Squares 4.2499064 4.0583026  
## Rice\_Chex 3.3091879 4.2240325  
## Rice\_Krispies 2.9914818 3.5170112  
## Shredded\_Wheat 4.4391570 5.7166893  
## Shredded\_Wheat\_'n'Bran 4.9511133 5.8969411  
## Shredded\_Wheat\_spoon\_size 4.8692304 5.7199472  
## Smacks 4.0460803 2.6308850  
## Special\_K 4.3468343 4.9161884  
## Strawberry\_Fruit\_Wheats 3.6716135 4.3560422  
## Total\_Corn\_Flakes 4.2156131 4.7144129  
## Total\_Raisin\_Bran 6.1336122 6.4041886  
## Total\_Whole\_Grain 3.9047489 5.0061788  
## Triples 2.6881519 3.1102843  
## Trix 2.9168007 2.4998723  
## Wheat\_Chex 2.5193215 3.5954877  
## Wheaties 1.6062305 3.8606772  
## Wheaties\_Honey\_Gold 1.4632596 2.2251898  
## Nutri-Grain\_Almond-Raisin  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat 4.6150103  
## Oatmeal\_Raisin\_Crisp 2.9213410  
## Post\_Nat.\_Raisin\_Bran 4.2637914  
## Product\_19 5.5139251  
## Puffed\_Rice 9.0850057  
## Puffed\_Wheat 9.0544412  
## Quaker\_Oat\_Squares 4.2483177  
## Raisin\_Bran 3.4326613  
## Raisin\_Nut\_Bran 4.4208643  
## Raisin\_Squares 5.2094618  
## Rice\_Chex 5.2242482  
## Rice\_Krispies 4.5425455  
## Shredded\_Wheat 6.8688864  
## Shredded\_Wheat\_'n'Bran 6.0059124  
## Shredded\_Wheat\_spoon\_size 5.9281969  
## Smacks 5.4577071  
## Special\_K 5.2619851  
## Strawberry\_Fruit\_Wheats 5.7057917  
## Total\_Corn\_Flakes 5.3185294  
## Total\_Raisin\_Bran 5.0480313  
## Total\_Whole\_Grain 5.2692567  
## Triples 3.7910630  
## Trix 5.3261455  
## Wheat\_Chex 4.0067985  
## Wheaties 4.2750754  
## Wheaties\_Honey\_Gold 4.0496122  
## Nutri-grain\_Wheat Oatmeal\_Raisin\_Crisp  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp 5.1728598   
## Post\_Nat.\_Raisin\_Bran 5.7010975 3.6118371  
## Product\_19 4.2340135 6.0941500  
## Puffed\_Rice 5.4896993 8.4882036  
## Puffed\_Wheat 5.3402539 8.3311493  
## Quaker\_Oat\_Squares 3.3841244 3.4258061  
## Raisin\_Bran 4.9845677 3.5276035  
## Raisin\_Nut\_Bran 4.3587069 2.5615860  
## Raisin\_Squares 3.3708286 4.6844238  
## Rice\_Chex 3.8693444 5.9103065  
## Rice\_Krispies 3.3278291 5.3639623  
## Shredded\_Wheat 3.5603814 6.7868289  
## Shredded\_Wheat\_'n'Bran 3.6738337 6.2373483  
## Shredded\_Wheat\_spoon\_size 3.6012328 6.1808747  
## Smacks 5.1933398 4.0098207  
## Special\_K 3.5741626 5.5592663  
## Strawberry\_Fruit\_Wheats 3.0723276 5.4595047  
## Total\_Corn\_Flakes 4.6145029 5.4718436  
## Total\_Raisin\_Bran 6.9621830 4.9246029  
## Total\_Whole\_Grain 3.9926432 5.1578749  
## Triples 3.3801454 3.9183823  
## Trix 4.9030840 4.1458814  
## Wheat\_Chex 2.9089758 4.0801073  
## Wheaties 2.4288213 4.3149020  
## Wheaties\_Honey\_Gold 3.7329485 3.2136402  
## Post\_Nat.\_Raisin\_Bran Product\_19  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19 7.0178650   
## Puffed\_Rice 9.4093176 7.9645160  
## Puffed\_Wheat 9.0139488 8.0205898  
## Quaker\_Oat\_Squares 4.6368840 5.3712536  
## Raisin\_Bran 2.2791787 6.3084086  
## Raisin\_Nut\_Bran 4.0688720 5.9968771  
## Raisin\_Squares 5.5048276 5.9990283  
## Rice\_Chex 7.1553668 4.5965972  
## Rice\_Krispies 6.6689878 3.8762370  
## Shredded\_Wheat 7.2938281 6.9650069  
## Shredded\_Wheat\_'n'Bran 6.6254678 7.1181461  
## Shredded\_Wheat\_spoon\_size 6.8042817 6.9662385  
## Smacks 5.1726789 6.4635768  
## Special\_K 6.4469242 4.9287504  
## Strawberry\_Fruit\_Wheats 5.8885650 5.8803715  
## Total\_Corn\_Flakes 7.0855165 2.5492450  
## Total\_Raisin\_Bran 4.4593993 6.1113284  
## Total\_Whole\_Grain 5.9451004 2.7931906  
## Triples 5.9410230 4.1918859  
## Trix 5.7390232 5.7836847  
## Wheat\_Chex 4.9961122 4.6952099  
## Wheaties 5.2267433 4.5867864  
## Wheaties\_Honey\_Gold 5.0634187 4.8175418  
## Puffed\_Rice Puffed\_Wheat  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat 1.3777170   
## Quaker\_Oat\_Squares 6.2634492 5.8815701  
## Raisin\_Bran 9.1268791 8.8199352  
## Raisin\_Nut\_Bran 6.7228185 6.3667607  
## Raisin\_Squares 5.3001510 5.2127756  
## Rice\_Chex 6.5098316 6.9611183  
## Rice\_Krispies 6.7921965 7.0747537  
## Shredded\_Wheat 3.9320759 3.8095298  
## Shredded\_Wheat\_'n'Bran 5.7678582 5.5380365  
## Shredded\_Wheat\_spoon\_size 5.6391816 5.5005090  
## Smacks 6.8066710 6.7008750  
## Special\_K 7.4964061 7.0653066  
## Strawberry\_Fruit\_Wheats 5.0081101 4.8998608  
## Total\_Corn\_Flakes 7.5359393 7.7686371  
## Total\_Raisin\_Bran 11.0745572 10.8745976  
## Total\_Whole\_Grain 7.4011518 7.2376905  
## Triples 6.5270452 6.7682517  
## Trix 6.4805444 6.6715926  
## Wheat\_Chex 6.4820030 6.3149431  
## Wheaties 6.1477502 5.9737272  
## Wheaties\_Honey\_Gold 6.4370942 6.5106360  
## Quaker\_Oat\_Squares Raisin\_Bran  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran 4.4471837   
## Raisin\_Nut\_Bran 2.3629928 4.1443829  
## Raisin\_Squares 3.0975732 5.1472285  
## Rice\_Chex 5.4955841 6.3038026  
## Rice\_Krispies 4.8590181 5.6488629  
## Shredded\_Wheat 4.8225941 6.8063913  
## Shredded\_Wheat\_'n'Bran 4.2557521 6.1151163  
## Shredded\_Wheat\_spoon\_size 4.2140518 6.2389251  
## Smacks 4.2670635 4.6630516  
## Special\_K 4.0112524 5.6451697  
## Strawberry\_Fruit\_Wheats 4.0198810 5.2244747  
## Total\_Corn\_Flakes 5.3133284 6.5055739  
## Total\_Raisin\_Bran 6.5582594 4.4484139  
## Total\_Whole\_Grain 4.4996280 5.5631980  
## Triples 3.7686797 5.3087540  
## Trix 4.7976273 5.1355111  
## Wheat\_Chex 2.8186999 4.3620382  
## Wheaties 3.3526700 4.5228931  
## Wheaties\_Honey\_Gold 3.3905298 4.4818804  
## Raisin\_Nut\_Bran Raisin\_Squares  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares 3.5964675   
## Rice\_Chex 5.9975055 5.4181749  
## Rice\_Krispies 5.4916354 5.1389762  
## Shredded\_Wheat 5.4420885 3.7762080  
## Shredded\_Wheat\_'n'Bran 5.2439052 3.5089822  
## Shredded\_Wheat\_spoon\_size 5.2773312 3.4534762  
## Smacks 3.6619750 4.0715635  
## Special\_K 5.2638328 5.5134716  
## Strawberry\_Fruit\_Wheats 4.4897393 2.9861959  
## Total\_Corn\_Flakes 5.5049342 5.6294048  
## Total\_Raisin\_Bran 6.1405926 7.2424686  
## Total\_Whole\_Grain 4.5944393 5.1818641  
## Triples 3.9913361 4.4290517  
## Trix 4.1076279 4.7293707  
## Wheat\_Chex 3.3878616 3.9262533  
## Wheaties 3.6133368 4.1739389  
## Wheaties\_Honey\_Gold 3.0776619 3.9713344  
## Rice\_Chex Rice\_Krispies Shredded\_Wheat  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies 1.9150118   
## Shredded\_Wheat 5.0657128 5.2948650   
## Shredded\_Wheat\_'n'Bran 5.6302779 5.5856590 2.3813851  
## Shredded\_Wheat\_spoon\_size 5.3584290 5.3253889 2.3648619  
## Smacks 5.9398860 5.5254285 5.9085025  
## Special\_K 5.3039407 4.2165751 5.5631751  
## Strawberry\_Fruit\_Wheats 4.6960854 4.8404981 2.5609475  
## Total\_Corn\_Flakes 4.2517848 4.1912909 6.5741075  
## Total\_Raisin\_Bran 7.5325488 7.2220794 9.0339660  
## Total\_Whole\_Grain 5.1726233 4.8807650 6.0773740  
## Triples 3.0004022 2.5585308 5.3117208  
## Trix 4.4329630 4.4270193 5.6994715  
## Wheat\_Chex 3.7719837 3.3881232 4.4023559  
## Wheaties 3.5968964 3.1949390 3.8963272  
## Wheaties\_Honey\_Gold 3.5119522 3.0623727 4.9223077  
## Shredded\_Wheat\_'n'Bran  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies   
## Shredded\_Wheat   
## Shredded\_Wheat\_'n'Bran   
## Shredded\_Wheat\_spoon\_size 0.5745479  
## Smacks 6.3573357  
## Special\_K 5.2992905  
## Strawberry\_Fruit\_Wheats 3.2114545  
## Total\_Corn\_Flakes 6.8474824  
## Total\_Raisin\_Bran 8.5426837  
## Total\_Whole\_Grain 6.2051378  
## Triples 5.3337687  
## Trix 6.4754818  
## Wheat\_Chex 4.0430351  
## Wheaties 4.0052453  
## Wheaties\_Honey\_Gold 5.1272766  
## Shredded\_Wheat\_spoon\_size Smacks  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies   
## Shredded\_Wheat   
## Shredded\_Wheat\_'n'Bran   
## Shredded\_Wheat\_spoon\_size   
## Smacks 6.2860674   
## Special\_K 5.1718596 5.9132661  
## Strawberry\_Fruit\_Wheats 3.1900938 4.2902299  
## Total\_Corn\_Flakes 6.6446260 6.0385645  
## Total\_Raisin\_Bran 8.5891640 6.5953431  
## Total\_Whole\_Grain 6.1788804 5.8056433  
## Triples 5.0907467 5.1361891  
## Trix 6.3232572 2.5516038  
## Wheat\_Chex 3.9977258 4.9318665  
## Wheaties 3.9583438 4.9270084  
## Wheaties\_Honey\_Gold 4.9706013 3.5334576  
## Special\_K Strawberry\_Fruit\_Wheats  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies   
## Shredded\_Wheat   
## Shredded\_Wheat\_'n'Bran   
## Shredded\_Wheat\_spoon\_size   
## Smacks   
## Special\_K   
## Strawberry\_Fruit\_Wheats 5.1948592   
## Total\_Corn\_Flakes 5.7617074 5.4014887  
## Total\_Raisin\_Bran 7.3716074 7.1937930  
## Total\_Whole\_Grain 5.0952124 4.8572663  
## Triples 4.7769418 4.6444673  
## Trix 6.0205065 4.1757675  
## Wheat\_Chex 3.8075328 3.9845327  
## Wheaties 3.5368761 3.4584889  
## Wheaties\_Honey\_Gold 4.5657188 4.0311548  
## Total\_Corn\_Flakes Total\_Raisin\_Bran  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies   
## Shredded\_Wheat   
## Shredded\_Wheat\_'n'Bran   
## Shredded\_Wheat\_spoon\_size   
## Smacks   
## Special\_K   
## Strawberry\_Fruit\_Wheats   
## Total\_Corn\_Flakes   
## Total\_Raisin\_Bran 5.7755876   
## Total\_Whole\_Grain 2.3940085 5.0820619  
## Triples 3.5960536 6.6724762  
## Trix 4.8825273 6.4508421  
## Wheat\_Chex 4.7956029 6.6265530  
## Wheaties 4.3553839 6.3538287  
## Wheaties\_Honey\_Gold 4.2117302 6.1454492  
## Total\_Whole\_Grain Triples Trix  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies   
## Shredded\_Wheat   
## Shredded\_Wheat\_'n'Bran   
## Shredded\_Wheat\_spoon\_size   
## Smacks   
## Special\_K   
## Strawberry\_Fruit\_Wheats   
## Total\_Corn\_Flakes   
## Total\_Raisin\_Bran   
## Total\_Whole\_Grain   
## Triples 4.2302806   
## Trix 5.2148918 3.8912625   
## Wheat\_Chex 4.1867764 3.0103032 4.6670777  
## Wheaties 3.6751387 2.9130638 4.1726458  
## Wheaties\_Honey\_Gold 4.3140522 2.3547407 2.5934518  
## Wheat\_Chex Wheaties  
## 100%\_Natural\_Bran   
## All-Bran   
## All-Bran\_with\_Extra\_Fiber   
## Apple\_Cinnamon\_Cheerios   
## Apple\_Jacks   
## Basic\_4   
## Bran\_Chex   
## Bran\_Flakes   
## Cap'n'Crunch   
## Cheerios   
## Cinnamon\_Toast\_Crunch   
## Clusters   
## Cocoa\_Puffs   
## Corn\_Chex   
## Corn\_Flakes   
## Corn\_Pops   
## Count\_Chocula   
## Cracklin'\_Oat\_Bran   
## Crispix   
## Crispy\_Wheat\_&\_Raisins   
## Double\_Chex   
## Froot\_Loops   
## Frosted\_Flakes   
## Frosted\_Mini-Wheats   
## Fruit\_&\_Fibre\_Dates,\_Walnuts,\_and\_Oats   
## Fruitful\_Bran   
## Fruity\_Pebbles   
## Golden\_Crisp   
## Golden\_Grahams   
## Grape\_Nuts\_Flakes   
## Grape-Nuts   
## Great\_Grains\_Pecan   
## Honey\_Graham\_Ohs   
## Honey\_Nut\_Cheerios   
## Honey-comb   
## Just\_Right\_Crunchy\_\_Nuggets   
## Just\_Right\_Fruit\_&\_Nut   
## Kix   
## Life   
## Lucky\_Charms   
## Maypo   
## Muesli\_Raisins,\_Dates,\_&\_Almonds   
## Muesli\_Raisins,\_Peaches,\_&\_Pecans   
## Mueslix\_Crispy\_Blend   
## Multi-Grain\_Cheerios   
## Nut&Honey\_Crunch   
## Nutri-Grain\_Almond-Raisin   
## Nutri-grain\_Wheat   
## Oatmeal\_Raisin\_Crisp   
## Post\_Nat.\_Raisin\_Bran   
## Product\_19   
## Puffed\_Rice   
## Puffed\_Wheat   
## Quaker\_Oat\_Squares   
## Raisin\_Bran   
## Raisin\_Nut\_Bran   
## Raisin\_Squares   
## Rice\_Chex   
## Rice\_Krispies   
## Shredded\_Wheat   
## Shredded\_Wheat\_'n'Bran   
## Shredded\_Wheat\_spoon\_size   
## Smacks   
## Special\_K   
## Strawberry\_Fruit\_Wheats   
## Total\_Corn\_Flakes   
## Total\_Raisin\_Bran   
## Total\_Whole\_Grain   
## Triples   
## Trix   
## Wheat\_Chex   
## Wheaties 2.0280207   
## Wheaties\_Honey\_Gold 2.6398120 2.4511652

hc\_single<-agnes(cereals.df.clean, method = "single")  
print(hc\_single$ac)

## [1] 0.5388557

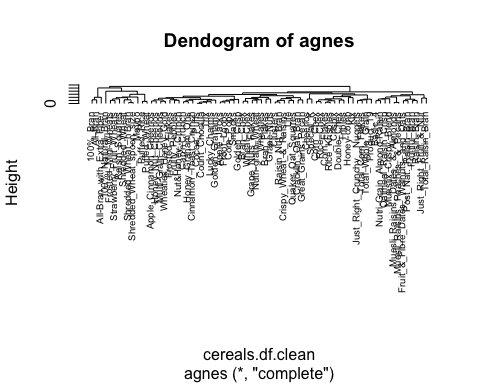
pltree(hc\_single, cex = 0.6, hang = -1, main = "Dendogram of agnes")



hc\_complete<-agnes(cereals.df.clean, method = "complete")  
print(hc\_complete$ac)

## [1] 0.8148499

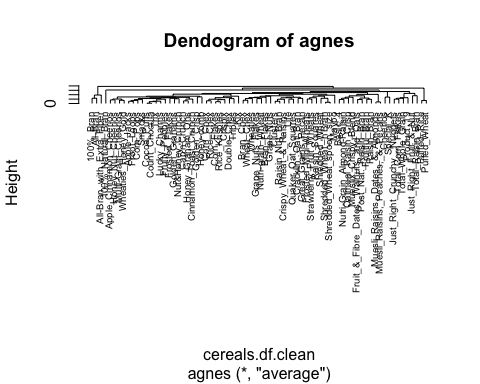
pltree(hc\_complete, cex = 0.6, hang = -1, main = "Dendogram of agnes")



hc\_average<-agnes(cereals.df.clean, method = "average")  
print(hc\_average$ac)

## [1] 0.7459437

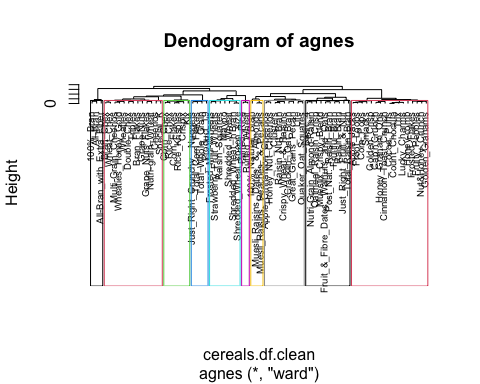
pltree(hc\_average, cex = 0.6, hang = -1, main = "Dendogram of agnes")



hc\_ward<-agnes(cereals.df.clean, method = "ward")  
print(hc\_ward$ac)

## [1] 0.8893093

pltree(hc\_ward, cex = 0.6, hang = -1, main = "Dendogram of agnes")  
rect.hclust(hc\_ward, k=10, border = 1:10)



#Ward linkage has highest AC, therefore is best method  
memb <- cutree(hc\_ward, k = 10)  
memb

## [1] 1 2 1 1 3 4 5 6 6 4 6 4 3 4 7 7 4 4 3 7 3 6 4 4 8  
## [26] 5 5 4 4 4 6 6 3 4 3 4 9 5 7 3 4 8 2 2 5 6 4 5 6 5  
## [51] 5 9 10 10 3 5 3 8 7 7 8 8 8 4 6 8 9 5 9 6 4 6 6 6

row.names(cereals.df.clean) <- paste(memb, ": ", row.names(cereals.df), sep = "")

#Partition data 75% "training", 25% "test"  
  
library(caret)

## Loading required package: lattice

##   
## Attaching package: 'caret'

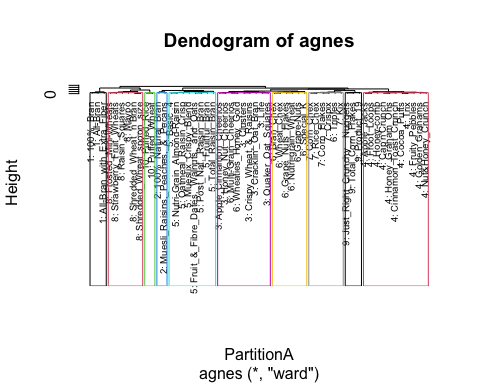
## The following object is masked from 'package:purrr':  
##   
## lift

set.seed(256)  
index<-createDataPartition(cereals.df.clean$calories, p=.75, list=FALSE)  
PartitionA<-cereals.df.clean[index,]  
PartitionB<-cereals.df.clean[-index,]

#Re-run model on partitioned data  
  
hc\_ward\_A<-agnes(PartitionA, method = "ward")  
print(hc\_ward\_A$ac)

## [1] 0.8726084

pltree(hc\_ward\_A, cex = 0.6, hang = -1, main = "Dendogram of agnes")  
rect.hclust(hc\_ward\_A, k=10, border = 1:10)



clusters\_A<-cutree(hc\_ward\_A, k=10)  
clusters\_A

## [1] 1 2 1 1 3 4 5 6 4 4 3 4 7 7 3 7 3 4 8 5 5 4 4 6 6  
## [26] 4 3 4 9 7 3 8 2 5 3 4 5 6 5 5 9 10 10 3 8 7 8 8 6 8  
## [51] 9 5 7 4 6 3

#The names of cereals contain their cluster assignments from the model run using all data. You can see that all cereals except 3 remain in their original clusters

##Calculate cluster centroids from Partition A clusters  
  
cluster1\_indices <- which(clusters\_A == 1)  
cluster1\_points <- PartitionA[cluster1\_indices, ]  
cluster1\_centroid <- colMeans(cluster1\_points, na.rm = TRUE)  
cluster1\_centroid

## calories protein fat sodium fiber carbo sugars   
## -2.2018711 1.3817478 -0.3310734 0.1727901 3.6413124 -2.0718749 -0.7894824   
## potass vitamins weight cups rating mfr\_A mfr\_G   
## 2.9837813 -0.1818422 -0.2008324 -1.8452553 2.2426479 0.0000000 0.0000000   
## mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R type\_H type\_C   
## 0.6666667 0.3333333 0.0000000 0.0000000 0.0000000 0.0000000 1.0000000   
## shelf\_1 shelf\_2 shelf\_3   
## 0.0000000 0.0000000 1.0000000

cluster2\_indices <- which(clusters\_A == 2)  
cluster2\_points <- PartitionA[cluster2\_indices, ]  
cluster2\_centroid <- colMeans(cluster2\_points, na.rm = TRUE)  
cluster2\_centroid

## calories protein fat sodium fiber carbo sugars   
## 1.4096515 0.9169781 2.9796608 -0.9649036 0.1338308 -0.7014280 0.5487109   
## potass vitamins weight cups rating mfr\_A mfr\_G   
## 0.7616745 -0.7425223 -0.2008324 0.7567534 -0.5921501 0.0000000 0.0000000   
## mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R type\_H type\_C   
## 0.0000000 0.0000000 0.0000000 0.5000000 0.5000000 0.0000000 1.0000000   
## shelf\_1 shelf\_2 shelf\_3   
## 0.0000000 0.0000000 1.0000000

cluster3\_indices <- which(clusters\_A == 3)  
cluster3\_points <- PartitionA[cluster3\_indices, ]  
cluster3\_centroid <- colMeans(cluster3\_points, na.rm = TRUE)  
cluster3\_centroid

## calories protein fat sodium fiber carbo   
## -0.07415236 0.24564405 0.55178903 0.12580572 -0.07249167 -0.55867316   
## sugars potass vitamins weight cups rating   
## 0.15362528 0.02097226 -0.18184220 -0.20083243 -0.57724741 -0.25815357   
## mfr\_A mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q   
## 0.00000000 0.66666667 0.11111111 0.00000000 0.00000000 0.22222222   
## mfr\_R type\_H type\_C shelf\_1 shelf\_2 shelf\_3   
## 0.00000000 0.00000000 1.00000000 0.44444444 0.11111111 0.44444444

cluster4\_indices <- which(clusters\_A == 4)  
cluster4\_points <- PartitionA[cluster4\_indices, ]  
cluster4\_centroid <- colMeans(cluster4\_points, na.rm = TRUE)  
cluster4\_centroid

## calories protein fat sodium fiber carbo   
## 0.33306653 -1.15335970 0.18058550 0.24052088 -0.78524194 -0.49118904   
## sugars potass vitamins weight cups rating   
## 0.97623758 -0.86402265 -0.18184220 -0.20083243 0.37108018 -1.16591976   
## mfr\_A mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q   
## 0.00000000 0.36363636 0.27272727 0.00000000 0.18181818 0.18181818   
## mfr\_R type\_H type\_C shelf\_1 shelf\_2 shelf\_3   
## 0.00000000 0.00000000 1.00000000 0.09090909 0.90909091 0.00000000

cluster5\_indices <- which(clusters\_A == 5)  
cluster5\_points <- PartitionA[cluster5\_indices, ]  
cluster5\_centroid <- colMeans(cluster5\_points, na.rm = TRUE)  
cluster5\_centroid

## calories protein fat sodium fiber carbo sugars   
## 1.2836681 0.4522084 0.4966101 0.3640838 0.6238466 0.1176281 0.8928177   
## potass vitamins weight cups rating mfr\_A mfr\_G   
## 1.0614826 0.2386679 2.0968491 -0.5159682 -0.4641796 0.0000000 0.3750000   
## mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R type\_H type\_C   
## 0.3750000 0.0000000 0.2500000 0.0000000 0.0000000 0.0000000 1.0000000   
## shelf\_1 shelf\_2 shelf\_3   
## 0.0000000 0.0000000 1.0000000

cluster6\_indices <- which(clusters\_A == 6)  
cluster6\_points <- PartitionA[cluster6\_indices, ]  
cluster6\_centroid <- colMeans(cluster6\_points, na.rm = TRUE)  
cluster6\_centroid

## calories protein fat sodium fiber carbo   
## -0.35411535 0.76205483 -0.49661013 0.33387950 0.27137907 0.41206004   
## sugars potass vitamins weight cups rating   
## -0.78948236 -0.07308517 -0.18184220 -0.20083243 -0.32505998 0.74699931   
## mfr\_A mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q   
## 0.00000000 0.00000000 0.33333333 0.00000000 0.33333333 0.00000000   
## mfr\_R type\_H type\_C shelf\_1 shelf\_2 shelf\_3   
## 0.33333333 0.00000000 1.00000000 0.50000000 0.00000000 0.50000000

cluster7\_indices <- which(clusters\_A == 7)  
cluster7\_points <- PartitionA[cluster7\_indices, ]  
cluster7\_centroid <- colMeans(cluster7\_points, na.rm = TRUE)  
cluster7\_centroid

## calories protein fat sodium fiber carbo   
## 0.065829135 -0.632254280 -0.662146841 1.139326379 -0.760233159 1.739680449   
## sugars potass vitamins weight cups rating   
## -1.018886914 -0.872573326 -0.181842201 -0.200832432 1.025439072 0.003794273   
## mfr\_A mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q   
## 0.000000000 0.333333333 0.333333333 0.000000000 0.000000000 0.000000000   
## mfr\_R type\_H type\_C shelf\_1 shelf\_2 shelf\_3   
## 0.333333333 0.000000000 1.000000000 0.500000000 0.166666667 0.333333333

cluster8\_indices <- which(clusters\_A == 8)  
cluster8\_points <- PartitionA[cluster8\_indices, ]  
cluster8\_centroid <- colMeans(cluster8\_points, na.rm = TRUE)  
cluster8\_centroid

## calories protein fat sodium fiber carbo sugars   
## -0.6900709 0.2972851 -0.8276836 -1.9314398 0.1338308 0.4548865 -0.8277164   
## potass vitamins weight cups rating mfr\_A mfr\_G   
## 0.1503012 -0.5556289 -0.2008324 -0.2048585 1.4362701 0.1666667 0.0000000   
## mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R type\_H type\_C   
## 0.3333333 0.5000000 0.0000000 0.0000000 0.0000000 0.1666667 0.8333333   
## shelf\_1 shelf\_2 shelf\_3   
## 0.3333333 0.5000000 0.1666667

cluster9\_indices <- which(clusters\_A == 9)  
cluster9\_points <- PartitionA[cluster9\_indices, ]  
cluster9\_centroid <- colMeans(cluster9\_points, na.rm = TRUE)  
cluster9\_centroid

## calories protein fat sodium fiber carbo   
## -0.01815976 -0.16748458 -0.33107342 0.81714763 -0.62268486 1.18293641   
## sugars potass vitamins weight cups rating   
## -0.71301417 -0.73148718 3.18223852 -0.20083243 0.75675340 -0.24342316   
## mfr\_A mfr\_G mfr\_K mfr\_N mfr\_P mfr\_Q   
## 0.00000000 0.33333333 0.66666667 0.00000000 0.00000000 0.00000000   
## mfr\_R type\_H type\_C shelf\_1 shelf\_2 shelf\_3   
## 0.00000000 0.00000000 1.00000000 0.00000000 0.00000000 1.00000000

cluster10\_indices <- which(clusters\_A == 10)  
cluster10\_points <- PartitionA[cluster10\_indices, ]  
cluster10\_centroid <- colMeans(cluster10\_points, na.rm = TRUE)  
cluster10\_centroid

## calories protein fat sodium fiber carbo sugars   
## -2.8737823 -0.9421007 -0.9932203 -1.9616441 -0.6914590 -0.8299074 -1.6306324   
## potass vitamins weight cups rating mfr\_A mfr\_G   
## -0.9313592 -1.3032024 -3.4599552 0.7567534 1.3901590 0.0000000 0.0000000   
## mfr\_K mfr\_N mfr\_P mfr\_Q mfr\_R type\_H type\_C   
## 0.0000000 0.0000000 0.0000000 1.0000000 0.0000000 0.0000000 1.0000000   
## shelf\_1 shelf\_2 shelf\_3   
## 0.0000000 0.0000000 1.0000000

all\_centroids<-data.frame(cluster1\_centroid, cluster2\_centroid, cluster3\_centroid, cluster4\_centroid, cluster5\_centroid, cluster6\_centroid, cluster7\_centroid, cluster8\_centroid, cluster9\_centroid, cluster10\_centroid)  
  
all\_centroids<-t(all\_centroids)

##Calculate euclidian distances between centroid values and "Partition B cereals". The centroid distances between themselves were intentionally kept as a cross check, as these should be 0.  
  
combined\_data <- rbind(all\_centroids, PartitionB)  
Partition\_distances <- dist(combined\_data, method = "euclidean")  
print(Partition\_distances)

## cluster1\_centroid cluster2\_centroid  
## cluster2\_centroid 7.912012   
## cluster3\_centroid 6.453165 3.743287  
## cluster4\_centroid 8.483231 4.654644  
## cluster5\_centroid 7.007743 4.243220  
## cluster6\_centroid 6.017873 4.993049  
## cluster7\_centroid 8.572523 5.978875  
## cluster8\_centroid 6.293780 5.558995  
## cluster9\_centroid 8.640527 6.471237  
## cluster10\_centroid 8.254048 7.890536  
## 6: Bran\_Flakes 4.488814 5.625594  
## 6: Cheerios 7.865889 5.433114  
## 4: Corn\_Pops 8.441631 5.557116  
## 4: Count\_Chocula 8.729136 4.999163  
## 6: Double\_Chex 7.198682 5.465562  
## 4: Frosted\_Flakes 8.193376 5.810529  
## 4: Golden\_Crisp 8.273523 5.510555  
## 3: Great\_Grains\_Pecan 6.620566 3.824391  
## 5: Just\_Right\_Fruit\_&\_Nut 8.773058 6.090735  
## 4: Lucky\_Charms 8.352978 4.601045  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 7.997969 1.984301  
## 5: Raisin\_Bran 6.236960 4.992314  
## 3: Raisin\_Nut\_Bran 5.826401 3.811690  
## 7: Rice\_Krispies 8.781900 6.501332  
## 8: Shredded\_Wheat 6.929531 6.624364  
## 4: Smacks 7.951953 4.743522  
## 9: Total\_Whole\_Grain 7.245543 5.967582  
## 6: Wheaties 6.575790 4.885855  
## cluster3\_centroid cluster4\_centroid  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid 2.661157   
## cluster5\_centroid 3.287093 4.276192  
## cluster6\_centroid 2.303095 3.996836  
## cluster7\_centroid 3.767827 3.691464  
## cluster8\_centroid 3.582402 4.789585  
## cluster9\_centroid 4.490975 4.665145  
## cluster10\_centroid 6.204550 6.692167  
## 6: Bran\_Flakes 3.149056 4.860685  
## 6: Cheerios 4.701839 6.109551  
## 4: Corn\_Pops 3.585668 2.066143  
## 4: Count\_Chocula 3.157358 1.122069  
## 6: Double\_Chex 2.811090 3.455525  
## 4: Frosted\_Flakes 3.065790 2.173929  
## 4: Golden\_Crisp 3.527194 2.999489  
## 3: Great\_Grains\_Pecan 3.084464 4.826737  
## 5: Just\_Right\_Fruit\_&\_Nut 4.914109 5.289862  
## 4: Lucky\_Charms 2.607335 1.173919  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 3.942220 4.846759  
## 5: Raisin\_Bran 3.842028 4.652157  
## 3: Raisin\_Nut\_Bran 1.559181 3.769773  
## 7: Rice\_Krispies 4.144548 4.053119  
## 8: Shredded\_Wheat 4.875686 5.793524  
## 4: Smacks 3.117173 2.334712  
## 9: Total\_Whole\_Grain 4.100511 5.080215  
## 6: Wheaties 2.556930 3.994247  
## cluster5\_centroid cluster6\_centroid  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid 3.976685   
## cluster7\_centroid 5.049281 2.994860  
## cluster8\_centroid 5.128321 2.686257  
## cluster9\_centroid 5.216615 4.181333  
## cluster10\_centroid 8.915254 5.829174  
## 6: Bran\_Flakes 4.155838 2.326054  
## 6: Cheerios 5.676638 4.131816  
## 4: Corn\_Pops 4.946572 4.184783  
## 4: Count\_Chocula 4.599113 4.613516  
## 6: Double\_Chex 4.286318 2.050225  
## 4: Frosted\_Flakes 4.570678 3.661607  
## 4: Golden\_Crisp 5.069778 4.300053  
## 3: Great\_Grains\_Pecan 4.237499 3.805139  
## 5: Just\_Right\_Fruit\_&\_Nut 3.653051 4.963725  
## 4: Lucky\_Charms 4.284534 4.009128  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 3.715357 4.671110  
## 5: Raisin\_Bran 2.212843 4.271379  
## 3: Raisin\_Nut\_Bran 3.545068 3.187446  
## 7: Rice\_Krispies 5.302713 3.284620  
## 8: Shredded\_Wheat 6.890703 3.934244  
## 4: Smacks 4.577224 4.486543  
## 9: Total\_Whole\_Grain 4.897774 3.868281  
## 6: Wheaties 4.282341 1.865940  
## cluster7\_centroid cluster8\_centroid  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid 4.341988   
## cluster9\_centroid 3.643297 5.448921  
## cluster10\_centroid 6.432514 5.008694  
## 6: Bran\_Flakes 4.619999 3.594372  
## 6: Cheerios 4.778263 5.678065  
## 4: Corn\_Pops 4.034304 4.146618  
## 4: Count\_Chocula 4.182318 5.244803  
## 6: Double\_Chex 2.382827 3.319981  
## 4: Frosted\_Flakes 3.477440 4.588551  
## 4: Golden\_Crisp 4.974320 4.273907  
## 3: Great\_Grains\_Pecan 5.658633 4.358171  
## 5: Just\_Right\_Fruit\_&\_Nut 5.209989 5.992006  
## 4: Lucky\_Charms 3.873127 4.772834  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5.594611 5.393772  
## 5: Raisin\_Bran 5.539081 5.116484  
## 3: Raisin\_Nut\_Bran 5.062469 4.058788  
## 7: Rice\_Krispies 1.220690 4.752094  
## 8: Shredded\_Wheat 4.869338 2.422201  
## 4: Smacks 5.299155 4.577645  
## 9: Total\_Whole\_Grain 4.406042 5.026229  
## 6: Wheaties 2.727314 3.228972  
## cluster9\_centroid cluster10\_centroid  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid 7.537784   
## 6: Bran\_Flakes 5.239610 6.205360  
## 6: Cheerios 5.637032 7.998239  
## 4: Corn\_Pops 4.962971 6.138294  
## 4: Count\_Chocula 5.058972 6.930550  
## 6: Double\_Chex 3.928757 5.744501  
## 4: Frosted\_Flakes 4.653444 6.613748  
## 4: Golden\_Crisp 5.646418 6.205675  
## 3: Great\_Grains\_Pecan 5.919924 7.093556  
## 5: Just\_Right\_Fruit\_&\_Nut 3.340031 9.572207  
## 4: Lucky\_Charms 4.750944 6.705485  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5.946129 8.397111  
## 5: Raisin\_Bran 6.014878 8.948244  
## 3: Raisin\_Nut\_Bran 5.333063 6.510871  
## 7: Rice\_Krispies 3.907097 6.900617  
## 8: Shredded\_Wheat 6.502730 3.809507  
## 4: Smacks 5.690664 6.718759  
## 9: Total\_Whole\_Grain 2.107084 7.287392  
## 6: Wheaties 4.229915 6.022093  
## 6: Bran\_Flakes 6: Cheerios 4: Corn\_Pops  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios 5.350603   
## 4: Corn\_Pops 5.014992 6.832498   
## 4: Count\_Chocula 5.215799 6.464783 2.402227  
## 6: Double\_Chex 3.238046 5.421873 3.608260  
## 4: Frosted\_Flakes 4.597422 6.513602 2.260675  
## 4: Golden\_Crisp 4.878973 6.832713 2.581051  
## 3: Great\_Grains\_Pecan 4.305413 6.068575 5.525801  
## 5: Just\_Right\_Fruit\_&\_Nut 5.802715 6.466095 5.561434  
## 4: Lucky\_Charms 4.803553 5.641950 2.434896  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5.417866 5.144329 5.526082  
## 5: Raisin\_Bran 4.019881 5.989313 5.003627  
## 3: Raisin\_Nut\_Bran 3.289989 5.451106 4.593769  
## 7: Rice\_Krispies 4.919127 4.994192 4.317950  
## 8: Shredded\_Wheat 4.638810 6.308798 5.112553  
## 4: Smacks 5.083400 6.918455 2.179161  
## 9: Total\_Whole\_Grain 4.417774 5.017816 5.434234  
## 6: Wheaties 3.232964 3.422466 4.398239  
## 4: Count\_Chocula 6: Double\_Chex  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex 3.955629   
## 4: Frosted\_Flakes 2.747367 3.087071  
## 4: Golden\_Crisp 3.203755 4.096142  
## 3: Great\_Grains\_Pecan 5.498512 4.509841  
## 5: Just\_Right\_Fruit\_&\_Nut 5.740736 4.974721  
## 4: Lucky\_Charms 1.015936 3.633519  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5.190122 5.083344  
## 5: Raisin\_Bran 4.868952 4.810147  
## 3: Raisin\_Nut\_Bran 4.074144 3.700801  
## 7: Rice\_Krispies 4.619144 2.958209  
## 8: Shredded\_Wheat 6.138559 4.370660  
## 4: Smacks 2.692726 4.375296  
## 9: Total\_Whole\_Grain 5.322515 4.203502  
## 6: Wheaties 4.352639 2.897328  
## 4: Frosted\_Flakes 4: Golden\_Crisp  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp 2.941823   
## 3: Great\_Grains\_Pecan 5.247755 5.270779  
## 5: Just\_Right\_Fruit\_&\_Nut 5.278483 6.014410  
## 4: Lucky\_Charms 2.795029 3.018728  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5.722538 5.542075  
## 5: Raisin\_Bran 4.860774 5.398126  
## 3: Raisin\_Nut\_Bran 4.236928 4.298466  
## 7: Rice\_Krispies 3.373132 5.195230  
## 8: Shredded\_Wheat 5.455554 5.215943  
## 4: Smacks 2.975752 2.480397  
## 9: Total\_Whole\_Grain 5.297796 5.773299  
## 6: Wheaties 3.995743 4.629824  
## 3: Great\_Grains\_Pecan  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp   
## 3: Great\_Grains\_Pecan   
## 5: Just\_Right\_Fruit\_&\_Nut 5.635965  
## 4: Lucky\_Charms 5.096091  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 4.221100  
## 5: Raisin\_Bran 5.161648  
## 3: Raisin\_Nut\_Bran 2.635211  
## 7: Rice\_Krispies 6.061140  
## 8: Shredded\_Wheat 5.760710  
## 4: Smacks 4.705740  
## 9: Total\_Whole\_Grain 5.413802  
## 6: Wheaties 4.540972  
## 5: Just\_Right\_Fruit\_&\_Nut 4: Lucky\_Charms  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp   
## 3: Great\_Grains\_Pecan   
## 5: Just\_Right\_Fruit\_&\_Nut   
## 4: Lucky\_Charms 5.441542   
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5.168167 4.726879  
## 5: Raisin\_Bran 4.817914 4.596872  
## 3: Raisin\_Nut\_Bran 5.473313 3.631047  
## 7: Rice\_Krispies 5.305189 4.320695  
## 8: Shredded\_Wheat 7.775172 5.806697  
## 4: Smacks 5.704910 2.505324  
## 9: Total\_Whole\_Grain 3.851795 4.895192  
## 6: Wheaties 5.322135 3.789707  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp   
## 3: Great\_Grains\_Pecan   
## 5: Just\_Right\_Fruit\_&\_Nut   
## 4: Lucky\_Charms   
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds   
## 5: Raisin\_Bran 4.557827  
## 3: Raisin\_Nut\_Bran 4.209570  
## 7: Rice\_Krispies 6.075605  
## 8: Shredded\_Wheat 6.706636  
## 4: Smacks 4.998105  
## 9: Total\_Whole\_Grain 5.534447  
## 6: Wheaties 4.688252  
## 5: Raisin\_Bran 3: Raisin\_Nut\_Bran  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp   
## 3: Great\_Grains\_Pecan   
## 5: Just\_Right\_Fruit\_&\_Nut   
## 4: Lucky\_Charms   
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds   
## 5: Raisin\_Bran   
## 3: Raisin\_Nut\_Bran 4.144383   
## 7: Rice\_Krispies 5.648863 5.491635  
## 8: Shredded\_Wheat 6.806391 5.442088  
## 4: Smacks 4.663052 3.661975  
## 9: Total\_Whole\_Grain 5.563198 4.594439  
## 6: Wheaties 4.522893 3.613337  
## 7: Rice\_Krispies 8: Shredded\_Wheat  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp   
## 3: Great\_Grains\_Pecan   
## 5: Just\_Right\_Fruit\_&\_Nut   
## 4: Lucky\_Charms   
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds   
## 5: Raisin\_Bran   
## 3: Raisin\_Nut\_Bran   
## 7: Rice\_Krispies   
## 8: Shredded\_Wheat 5.294865   
## 4: Smacks 5.525428 5.908502  
## 9: Total\_Whole\_Grain 4.880765 6.077374  
## 6: Wheaties 3.194939 3.896327  
## 4: Smacks 9: Total\_Whole\_Grain  
## cluster2\_centroid   
## cluster3\_centroid   
## cluster4\_centroid   
## cluster5\_centroid   
## cluster6\_centroid   
## cluster7\_centroid   
## cluster8\_centroid   
## cluster9\_centroid   
## cluster10\_centroid   
## 6: Bran\_Flakes   
## 6: Cheerios   
## 4: Corn\_Pops   
## 4: Count\_Chocula   
## 6: Double\_Chex   
## 4: Frosted\_Flakes   
## 4: Golden\_Crisp   
## 3: Great\_Grains\_Pecan   
## 5: Just\_Right\_Fruit\_&\_Nut   
## 4: Lucky\_Charms   
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds   
## 5: Raisin\_Bran   
## 3: Raisin\_Nut\_Bran   
## 7: Rice\_Krispies   
## 8: Shredded\_Wheat   
## 4: Smacks   
## 9: Total\_Whole\_Grain 5.805643   
## 6: Wheaties 4.927008 3.675139

Partition\_distances<-as.matrix(Partition\_distances)  
centroid\_PartB\_distances <- Partition\_distances[, 1:10]  
  
##Find the centroid value with minimum distance to each Partition B cereal <- these are the cluster assignments for Parition B cereals based on Partition A centroids   
New\_Cluster\_Assignment <- apply(centroid\_PartB\_distances, 1, which.min)  
print(New\_Cluster\_Assignment)

## cluster1\_centroid cluster2\_centroid   
## 1 2   
## cluster3\_centroid cluster4\_centroid   
## 3 4   
## cluster5\_centroid cluster6\_centroid   
## 5 6   
## cluster7\_centroid cluster8\_centroid   
## 7 8   
## cluster9\_centroid cluster10\_centroid   
## 9 10   
## 6: Bran\_Flakes 6: Cheerios   
## 6 6   
## 4: Corn\_Pops 4: Count\_Chocula   
## 4 4   
## 6: Double\_Chex 4: Frosted\_Flakes   
## 6 4   
## 4: Golden\_Crisp 3: Great\_Grains\_Pecan   
## 4 3   
## 5: Just\_Right\_Fruit\_&\_Nut 4: Lucky\_Charms   
## 9 4   
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 5: Raisin\_Bran   
## 2 5   
## 3: Raisin\_Nut\_Bran 7: Rice\_Krispies   
## 3 7   
## 8: Shredded\_Wheat 4: Smacks   
## 8 4   
## 9: Total\_Whole\_Grain 6: Wheaties   
## 9 6

PartB\_PartA<-as.data.frame(New\_Cluster\_Assignment)  
print(PartB\_PartA)

## New\_Cluster\_Assignment  
## cluster1\_centroid 1  
## cluster2\_centroid 2  
## cluster3\_centroid 3  
## cluster4\_centroid 4  
## cluster5\_centroid 5  
## cluster6\_centroid 6  
## cluster7\_centroid 7  
## cluster8\_centroid 8  
## cluster9\_centroid 9  
## cluster10\_centroid 10  
## 6: Bran\_Flakes 6  
## 6: Cheerios 6  
## 4: Corn\_Pops 4  
## 4: Count\_Chocula 4  
## 6: Double\_Chex 6  
## 4: Frosted\_Flakes 4  
## 4: Golden\_Crisp 4  
## 3: Great\_Grains\_Pecan 3  
## 5: Just\_Right\_Fruit\_&\_Nut 9  
## 4: Lucky\_Charms 4  
## 2: Muesli\_Raisins,\_Dates,\_&\_Almonds 2  
## 5: Raisin\_Bran 5  
## 3: Raisin\_Nut\_Bran 3  
## 7: Rice\_Krispies 7  
## 8: Shredded\_Wheat 8  
## 4: Smacks 4  
## 9: Total\_Whole\_Grain 9  
## 6: Wheaties 6

## In the Partition A model, we see that 3 cereals change clusters from the model run on all data, approximately 95% stability using 75% of the data.

cereals.df.healthy<-cereals.df[,-c(1,2,12, 13, 15)]  
  
##scale all nutrition variables to equal serving size (1 cup). Include "cups" as cross check that all values were scaled appropriately  
cereals.df.healthy$calories<-cereals.df.healthy$calories/cereals.df.healthy$cups  
cereals.df.healthy$protein<-cereals.df.healthy$protein/cereals.df.healthy$cups  
cereals.df.healthy$fat<-cereals.df.healthy$fat/cereals.df.healthy$cups  
cereals.df.healthy$sodium<-cereals.df.healthy$sodium/cereals.df.healthy$cups  
cereals.df.healthy$fiber<-cereals.df.healthy$fiber/cereals.df.healthy$cups  
cereals.df.healthy$carbo<-cereals.df.healthy$carbo/cereals.df.healthy$cups  
cereals.df.healthy$sugars<-cereals.df.healthy$sugars/cereals.df.healthy$cups  
cereals.df.healthy$potass<-cereals.df.healthy$potass/cereals.df.healthy$cups  
cereals.df.healthy$vitamins<-cereals.df.healthy$vitamins/cereals.df.healthy$cups  
cereals.df.healthy$cups<-cereals.df.healthy$cups/cereals.df.healthy$cups

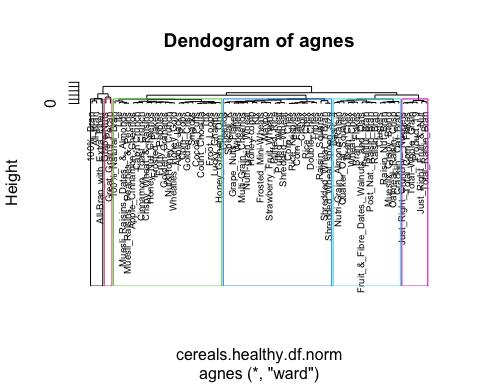
##normalize data. Since cups is now equal for all cereals, it does not need to be included   
cereals.healthy.df.norm <- scale(cereals.df.healthy[,1:9])  
##check scaling  
summary(cereals.healthy.df.norm)

## calories protein fat sodium   
## Min. :-1.5342 Min. :-1.1309 Min. :-0.8613 Min. :-1.58739   
## 1st Qu.:-0.5543 1st Qu.:-0.6330 1st Qu.:-0.8613 1st Qu.:-0.47463   
## Median :-0.1570 Median :-0.2342 Median :-0.2570 Median : 0.04865   
## Mean : 0.0000 Mean : 0.0000 Mean : 0.0000 Mean : 0.00000   
## 3rd Qu.: 0.2623 3rd Qu.: 0.3552 3rd Qu.: 0.3474 3rd Qu.: 0.45875   
## Max. : 4.8351 Max. : 3.4041 Max. : 4.6326 Max. : 4.17016   
## fiber carbo sugars potass   
## Min. :-0.63213 Min. :-1.3818 Min. :-1.609 Min. :-0.8083   
## 1st Qu.:-0.58891 1st Qu.:-0.5275 1st Qu.:-1.098 1st Qu.:-0.6175   
## Median :-0.28640 Median :-0.2326 Median : 0.264 Median :-0.3386   
## Mean : 0.00000 Mean : 0.0000 Mean : 0.000 Mean : 0.0000   
## 3rd Qu.: 0.05932 3rd Qu.: 0.3064 3rd Qu.: 0.674 3rd Qu.: 0.3086   
## Max. : 4.60615 Max. : 5.9402 Max. : 1.949 Max. : 4.7972   
## vitamins   
## Min. :-1.43386   
## 1st Qu.:-0.49189   
## Median :-0.17790   
## Mean : 0.00000   
## 3rd Qu.:-0.02794   
## Max. : 3.58996

##recluster  
hc\_ward\_healthy<-agnes(cereals.healthy.df.norm, method = "ward")  
print(hc\_ward\_healthy$ac)

## [1] 0.931985

pltree(hc\_ward\_healthy, cex = 0.6, hang = -1, main = "Dendogram of agnes")  
##reconsider number of clusters  
rect.hclust(hc\_ward\_healthy, k=6, border = 1:6)



##add column for cluster assignment to RAW data to evaluate nutritional measures  
memb <- cutree(hc\_ward\_healthy, k = 6)  
memb

## [1] 1 2 1 1 2 2 3 3 3 2 4 2 3 2 4 4 2 2 3 4 2 4 2 2 4 3 3 2 2 2 4 5 5 2 2 4 6 6  
## [39] 4 2 2 4 2 2 3 4 2 3 4 3 3 6 4 4 3 3 3 4 4 4 4 4 4 2 4 4 6 6 6 4 2 3 4 2

cereals.df.healthy$Cluster <- memb

summary\_by\_cluster <- cereals.df.healthy %>%  
 group\_by(Cluster) %>%  
 summarise(  
 Mean\_calories = mean(calories),  
 mean\_protein = mean(protein),  
 mean\_fat = mean(fat),  
 mean\_sodium = mean(sodium),  
 mean\_fiber = mean(fiber),  
 mean\_carbo = mean(carbo),  
 mean\_sugars = mean(sugars),  
 mean\_potass = mean(potass),  
 mean\_vitamins = mean(vitamins))  
   
print(summary\_by\_cluster)

## # A tibble: 6 × 10  
## Cluster Mean\_calories mean\_protein mean\_fat mean\_sodium mean\_fiber mean\_carbo  
## <int> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 1 175. 10.7 2.02 487. 28.5 17.5  
## 2 2 135. 2.27 1.66 190. 1.07 14.8  
## 3 3 189. 4.96 2.50 294. 5.61 22.9  
## 4 4 105. 2.76 0.322 142. 1.77 19.0  
## 5 5 402. 10.5 4.55 454. 10.5 53.7  
## 6 6 124. 2.83 0.889 218. 1.94 19.3  
## # ℹ 3 more variables: mean\_sugars <dbl>, mean\_potass <dbl>, mean\_vitamins <dbl>

#Cluster 6 provides the best nutrition and includes 6 cereals.  
  
#The Data should be normalized since there is a range of characteristics needed to determine healthy cereals.