CS 10A: An introductory study of algorithms and abstractions Sample programming challenges

1. Car Type: Honda Fit

45 Miles per Gallon with a 13 gallon tank

How many miles can you drive on a full tank of gas?

If the current price for gas is $3.89 per gallon what is the total cost to fill the tank? How much would it cost you for every mile you drive?

**mpg=45 or input mpg**

**tank\_size=13 or input tank\_size**

**totalmiles=mpg \* tanksize**

**gaspergallon=3.89**

**totalgascost-gaspergallon\*tank\_size**

**costpermile=totalgascost/totalmiles**

**MPG = 45 or input MPG**

**TANK\_SIZE= 13 or input TANK\_SIZE**

**TOTALMILES=MPG \* TANKSIZE**

**GAS\_**

1. A Box of Bigelow of Green Tea with 20 tea bags cost $3.89 at your local Safeway store. What is the cost per bag of tea?

Let’s say Starbucks sold a cup of Bigelow Green Tea plain for $2.25, what is the gross profit per cup?

What might be the other operational expenses to figure in at a later point?

**tea\_bags\_per\_box=20**

**green\_tea\_box\_cost=3.89**

**costperbag=green\_tea\_box\_cost/tea\_bags\_per\_box**

1. You took an “interest free” student loan of $6000 per year for four years.

If you are able to pay $350 per month, how many months will it take for you to complete paying off the full loan?