

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_
```

2) 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
```

3) 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?