Use the following to answer questions 1 – 2.

A cruise ship charges guest $2 for any connect time less than the full minute in their internet café. For each additional portion of a minute that is less than a min, an additional $0.50 is charged. The Following function shows the total cost, as a function of the number of minutes, t.

$$f(t) = 0.5[[t]] + 2$$

1) If you connect to the internet for 22.45 minutes how much are you charged?

2) If you connect to the internet for 10.5 minutes how much are you charged?

Use the following to answer questions 3 – 5.

A local car rental company charges a weekly rate of $200 with 1000 free miles. Each additional mile is $0.20. The following piecewise function and graph represents the given situation.

$$C = \begin{cases} 200 & if\ x \leq 1000 \\ 0.2x & if\ x > 1000 \end{cases}$$

3) Which of the following do you use to show the cost of renting a car if the mileage is 1000 or under?
    a. $C = 0.2x$ b. C = 200
    c. C = 0.2x – 200   d. C = 0.2x + 200

4) Which of the following do you use to show the cost of renting a car if the mileage is 3000?
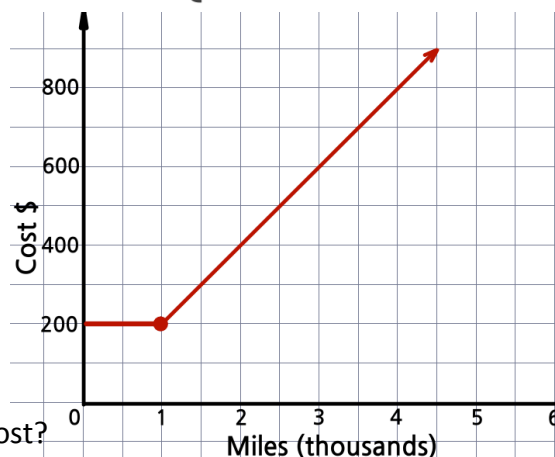   a. $C = 0.2x$ b. C = 200
    c. C = 0.2x – 200   d. C = 0.2x + 200

5) If you rent a car and drive 500 miles, how much is the cost?

6) If you rent a car and drive 3 thousand miles, how much is the cost?

7) If your cost is $700, how many miles did you drive?

Find the vertex of the following absolute value functions.

8) f(x) = 3|x + 2| - 5   9) y = |-5x | + 2   10) g(x) = |0.5x – 3|

Prior to September, 2000, taxi fares from Washington DC to Maryland were described as follows: $2.00 up to and including ½ mile, $0.50 for each additional ½ mile increment.

11) Which of the following functions fit the data.
a) f(x) = [[2x]] + 2   b) f(x) = [[0.5x]] + 2
c) f(x) = |2x| + 2   d) f(x) = |0.5| + 2

12) How much will the ride cost if you go 2.5 miles?

13) How many miles were traveled if you were charged $3.50?
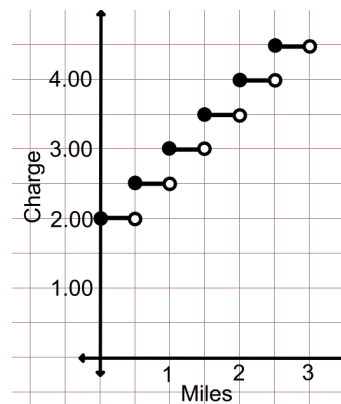
For a hiking trip, you are making a mix of x ounces of peanuts and y ounces of dried fruit. The mix needs to weigh no more than 20 ounces. The amount of dried fruit needs to be at least twice the amount of peanuts.

14) What are 4 possible combinations for the weights of peanuts and dried fruit?

15) If the total amount of protein in an ounce of peanuts is 7 and the total protein in an ounce of dried fruit is 6, then use the objective function to find the maximum possible amount of protein you can get out of the mixture.

T = 7p + 6f

(6.7, 13.3)

ounces of dried fruit

ounces of peanuts