Name: _____   Class: _____

Algebra Quarterly 1 Review Sheet 1

<u>Question 1</u>
Ron and Shawn's ages are consecutive even integers. Ron is younger than Shawn. Suppose Ron's age is represented by x. If twenty times Ron's age less than the square of Shawn's age is 60, create an equation that can be used to find Ron's age. Do not solve for the equation, simply create one.
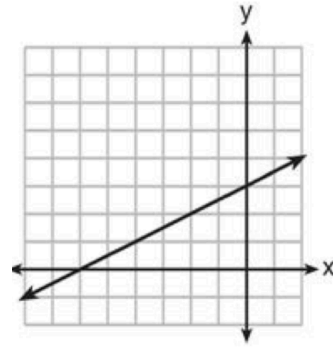

<u>Question 2</u>
Find the value of x that makes the following equation true. Express your answer as a decimal if necessary.

$$\frac{2}{3}\left(\frac{1}{4}x - 2\right) = \frac{1}{5}\left(\frac{4}{3}x - 1\right)$$

<u>Question 3</u>
Find the **rate of change** (aka slope) of the following:

x	y
0	-8
2	-4
3	-2
5	0

$$y = 8x + x - 10$$

$$3y = -12x + 21$$

<u>Question 4</u>
Solve the equation for x: $\frac{4}{5}x - 10 = \frac{4}{5}(x - 5) - 6$

<u>Question 5</u>

Design 2   Design 3   Design 4

If the pattern continues, how many squares will be in the 200th design?

Question 6
Consider the table below:

x	y
-5	18
-3	13.5
-1	9
1	4.5
3	0

(a) Create an equation that begins with "y = " that represents the table above.

(b) Sam said that 3 represents the y-intercept since it is across from 0. Explain why he's wrong.

(c) Frodo said that the table above represents a "linear function". Explain why he's right.

Question 7
The cost of mail order fruits and vegetables is modeled by the equation $C = 8(p - 2) + 20$, where C is the total cost for p pounds of fruits and vegetables.

(a) Find the slope and explain what it means in the context of the problem.

(b) Find the y-intercept and explain what it means in the context of the problem.

Question 8
Bilbo was in the business of giving hiking tours. For the "premium route", he charges $8.00 for the first 2 hours of the hike, with each additional hour costing $2.50. For the "standard route", he charges $2.75 per hour.

(a) Create an equation "y = " for the cost of hiking x hours on the premium route

(b) Create an equation "y = " for the cost of hiking x hours on the standard route

(c) Gandalf couldn't choose between the premium or standard route. Help him by determining how long of a hike he would need to take so that the premium route actually cost *less* than the standard route. Do this "algebraically", meaning you cannot use any tables or graphs in your explanation.