

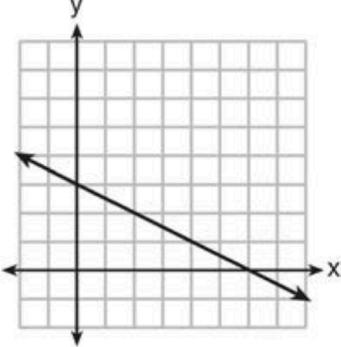
Name: _____

Class: _____

Algebra Quarterly 1 Review Sheet 2

Question 1

Find which has the greatest **rate of change**. In addition, find which has the greatest **y-intercept**.

	<table border="1" style="margin: auto;"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-8</td> <td>14</td> </tr> <tr> <td>-2</td> <td>11</td> </tr> <tr> <td>0</td> <td>10</td> </tr> <tr> <td>10</td> <td>5</td> </tr> </tbody> </table>	x	y	-8	14	-2	11	0	10	10	5
x	y										
-8	14										
-2	11										
0	10										
10	5										
<p>A line that passes through the point (4, 6) and has a y-intercept of -3.</p>	$12x + 12y = 8$										

Question 2

Paul and Saul’s ages are consecutive integers. Saul is younger than Paul. If the difference between five more than Saul’s age and five less than Paul’s age is equal to 9, create an equation that can be used to find Paul’s age. Do not solve the equation.

Question 3

Solve for x:

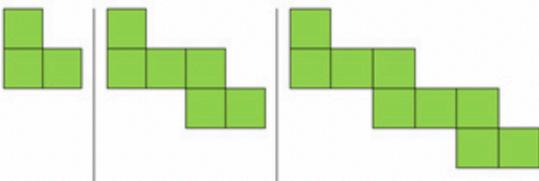
$$\frac{1}{3}x + 18 = \frac{2}{3}(x - 6) - \frac{1}{3}x$$

Question 4

Design 100

Design 102

Design 104



Find the number of blocks in Design 2. “Negatives blocks” are allowed.

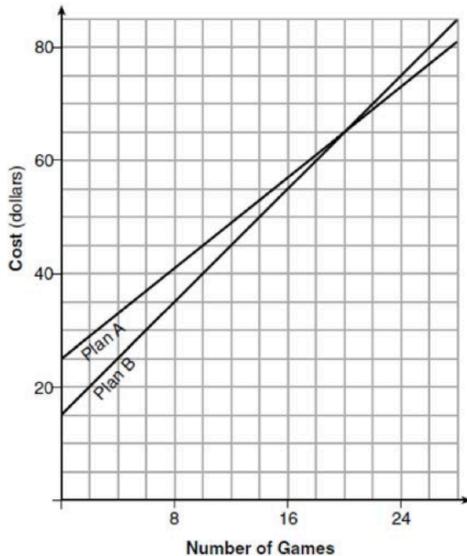
Question 5

Find the value of x that makes the following equation true. Express your answer as a decimal if necessary.

$$4(x - 7) = 0.3(x + 2) + 2.11$$

Question 6

The graph below models the cost of renting video games with a membership in Plan A and Plan B.



- Create an *expression* for Plan A that gives the cost of renting x video games.
- Create an *expression* for Plan B that gives the cost of renting x video games.
- Show algebraically that Plan A and Plan B are equally worthwhile as long as you rent 20 video games.
- Suppose Dylan has only \$50 to spend on video games. Show algebraically that he would get more video games using Plan B than Plan A.

Question 7

The owner of a small computer repair business has one employee, who is paid an hourly rate of \$22. The owner estimates his weekly profit using the function $P = 8600 - 22(x - 3)$, where x represents the number of hours his employee works per week.

- Find the slope and explain what it means in the context of the problem.
- Find the y-intercept and explain what it means in the context of the problem.

Question 8

Consider the table below:

x	y
1	4
2	8
3	16

(a) Explain why the table does *not* represent a linear function

(b) Even though the table does not have a constant rate of change (slope), it is still possible to find the y-intercept. Find the y-intercept. HINT: Look for a pattern in the table.