Review

April-19-15
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Math 9 Chapter 4 Review

Name KEY

1. For each given equation solve for a when $b = -3$

a. $a = -2b - 3$

$a = -2(-3) - 3$
$= +6 - 3$
$a = 3$

b. $a = 4b + 6$

$a = 4(-3) + 6$
$= -12 + 6$
$a = -6$

c. $a = -10 - 5b$

$a = -10 - 5(-3)$
$= -10 + 15$
$a = 5$

2. Here is a pattern made from square tiles.

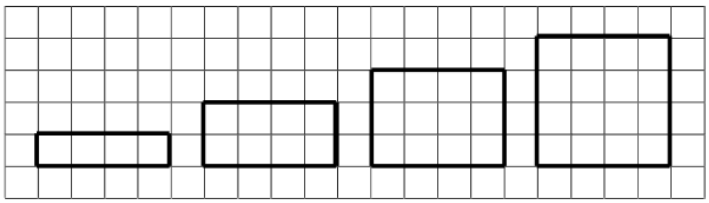


Figure 1 Figure 2 Figure 3 Figure 4

a. Make a table of values that shows how the number of square tiles, s, in a figure relates to the figure number, f.

f	s
1	4
2	8
3	12
4	16

+1 +1 +1

+4 +4 +4

b. Write an expression for the number of square tiles in terms of f.

# of square tiles = 4 × figure #

c. Write an equation that relates s and f. Verify the equation by substituting the values from the table.

$S = 4f$

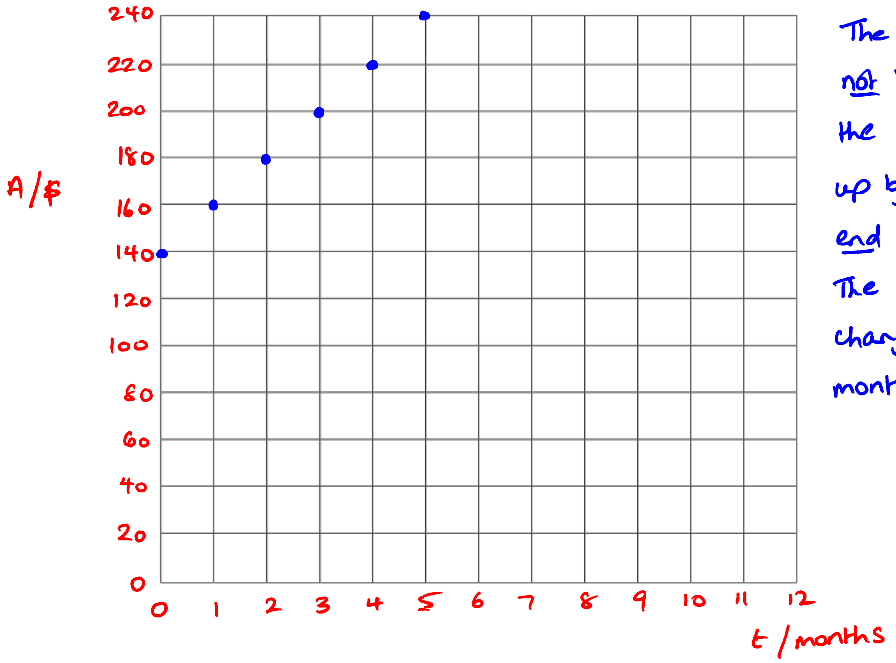
d. How are the expression and equations alike? How are they different?

3. Norm has $140 in his savings account. Each month he deposits $20 into this account. Let t represent the time in months and A the account balance in dollars.

a. Create a table of values to show several values of t and A.

t	0	1	2	3
A	140	160	180	200

b. Graph the data. Will you join the points? Explain.



The points should not be joined, because the amount only goes up by $20 at the end of each month. The amount does not change during the month.

c. Is this relation linear? Justify your answer.

Yes. The value of amount changes by a constant ($20) for each unit change in time.

d. Describe the pattern in the table. How are these patterns shown in the graph?

ToV: for each unit increase in t, the value of A increases by 20.

Graph: The slope of graph is 20.

e. Write an equation that relates A and t.

$A = 20t + 140$

4. Find the pattern in each table and determine the equation.

x	y
1	2
2	5
3	8
4	11
5	14

+1 +1 +1 +1

+3 +3 +3 +3

$y = 3x - 1$

x	y
1	3
2	1
3	-1
4	-3
5	-5

-2 -2 -2 -2

$y = -2x + 5$

5. Use each equation to complete each table of values.

$y = 3x + 4$

x	y
1	7
2	10
3	13
4	16

$y = 10 - 2x$

x	y
1	8
2	6
3	4
4	2

6. Does each equation describe a vertical, horizontal, or an oblique line? How do you know?

a. $2x + 9 = 0$

$\Rightarrow x = -4.5$

Vertical

(only x in eqn.)

b. $2y - 7 = 3$

$\Rightarrow y = 5$

Horizontal

(only y in eqn.)

c. $2x + y = 7$

Oblique

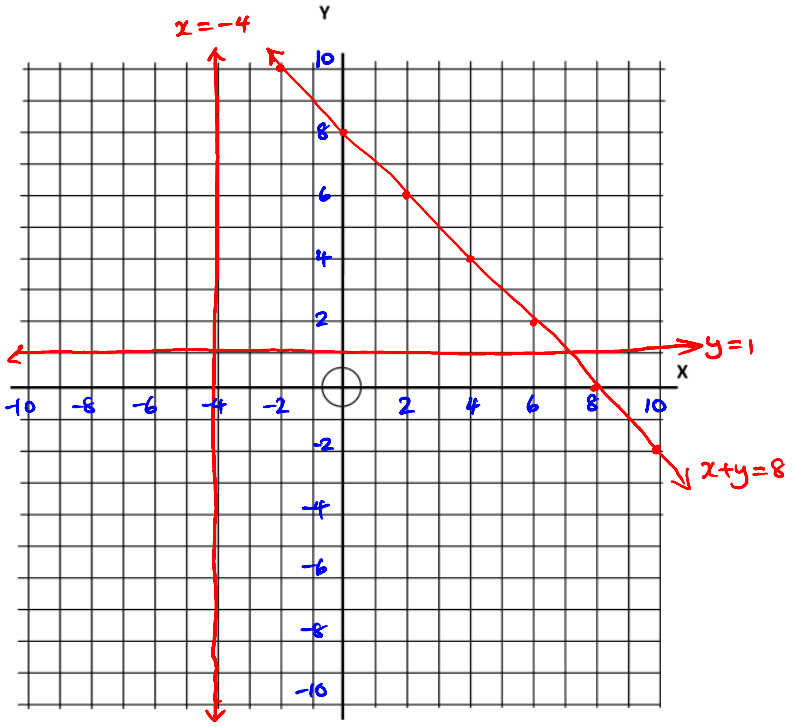
(Both x and y in eqn.)

7. Draw the line of each equation on the grid and label it. (Use a ruler!)

a. $y = 1$

b. $x = -4$

c. $x + y = 8$



8. Match each equation with its graph below. Explain your strategy.

a. $x + 2y = 6$

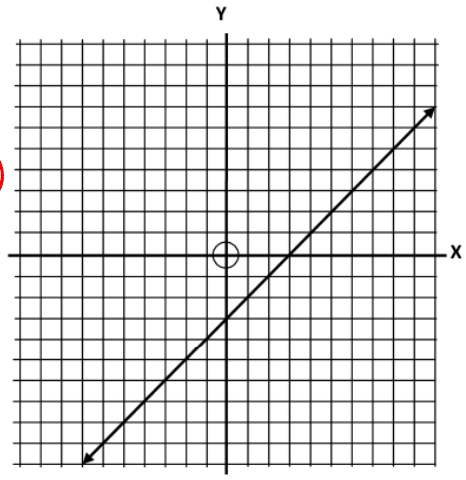
b. $y = x - 3$

c. $y = 2x - 3$

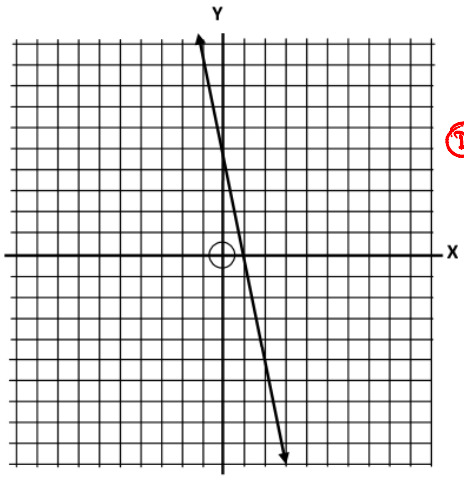
d. $y = -4x + 5$

		Slope	y-int
a.	$y = -\frac{1}{2}x + 3 \Rightarrow$	$-\frac{1}{2}$	$+3$
b.	$y = x - 3 \Rightarrow$	$+\frac{1}{1}$	-3
c.	$y = 2x - 3 \Rightarrow$	$+\frac{2}{1}$	-3
d.	$y = -4x + 5 \Rightarrow$	$-\frac{4}{1}$	$+5$

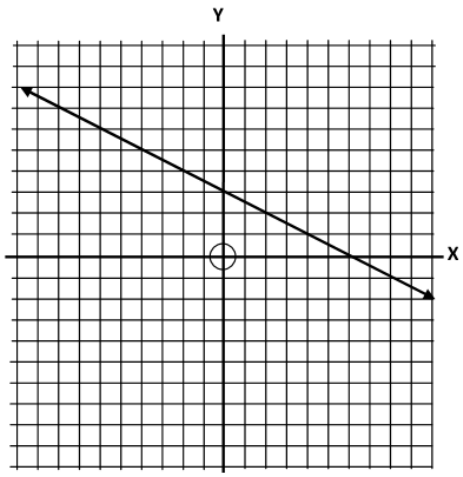
B

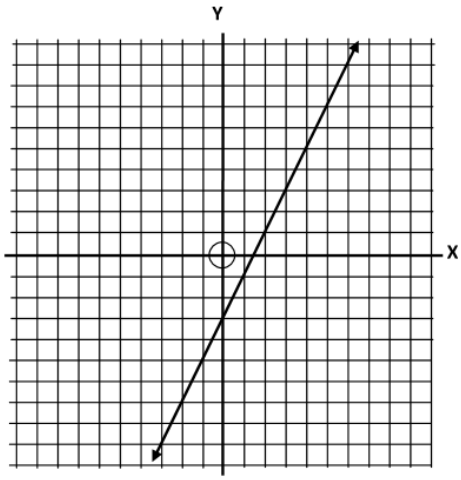


D

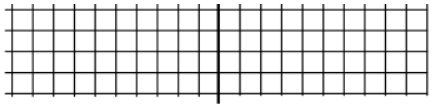


A

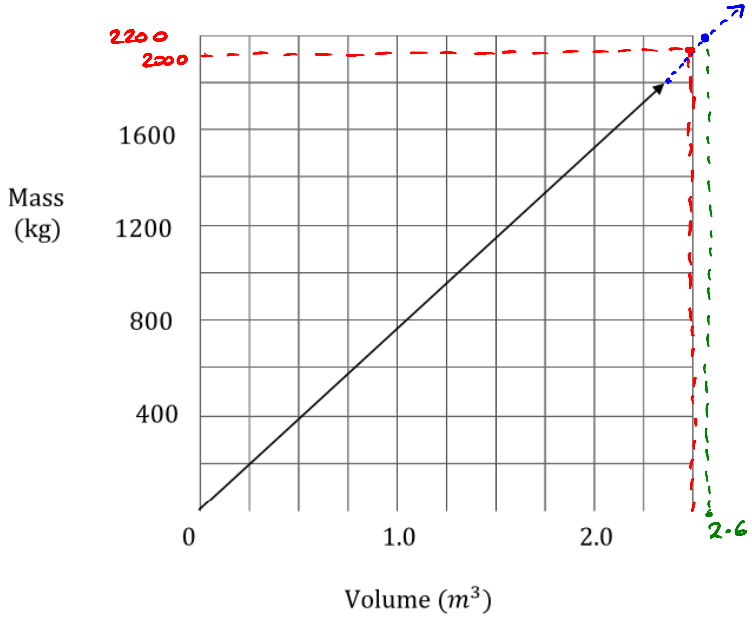




C



9. This graph shows how the mass of wheat changes with its volume.



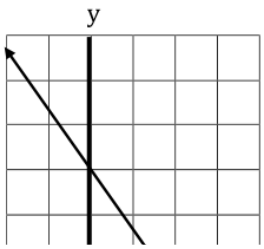
a. Use the graph to estimate the volume of 2200kg

$2.6\ m^3$

b. Use the graph to estimate the mass of $2.5m^3$ of wheat.

2000 kg

10. This graph represents a linear relation.



Equation of graph is $y = -\frac{4}{3}x + 4$

a. Estimate the value of y when:

i. $x = -4$ $\quad y = -\frac{4}{3}(-4) + 4 = 9.3$

ii. $x = 5$ $\quad y = -\frac{4}{3}(5) + 4 = -2.7$

ii. $x = 5$ $y = -\frac{4}{3}(5) + 4 = -2.7$

b. Estimate the value of x when:

i. $y = 7$: $7 = -\frac{4}{3}x + 4 \Rightarrow x = -2.3$

ii. $y = -3$: $-3 = -\frac{4}{3}x + 4 \Rightarrow x = 5.3$