Write a function rule for each table of values.

1.

X	Y
−8	−12
−2	3
0	8
5	20.5
12	38

$y = mx + b$ (slope, y-int)

$y = mx + 8$

$3 = -2m + 8$

$-5m = -2m$

$m = 2.5$

y = $2.5x + 8$

2.

X	Y
−5	12
−3	7.2
4	−9.6
11	−26.4
20	−48

$y = mx$

$m = \frac{y}{x}$

$m = \frac{12}{-5}$

y = $-2.4x$

3. A towing company charges $75 to come to where your car is broken down and 85 cents per mile to tow your car.

$y = 75 + .85x$

a) How much will you have to pay if you need to have them tow your car 15 miles to your favorite repair shop?

$y = 75 + .85(15)$

$= \$87.75$

$y = \$$

$x = mi.$

b) How far did they tow your car if the total bill was $109?

$109 = 75 + .85x$

$x = 40 mi.$

4. You sold 24 necklaces at the craft fair for $190.80.

a) How many necklaces did you sell if you made $143.10?

$y = 7.95x$

$143.10 = 7.95x$

$x = 18$ necklaces

$y = \$$

$x = \#$ Neck-laces

b) How much would you make if you sold 13 necklaces?

$\$103.35$

Classwork Worksheet Ans:

1. $y = 7.50x$ — y = money; x = miles walked
2. $y = 5x$ — y = perimeter; x = length of side
3. $y = 136 + 15x$ — y = money in your acct; x = week
4. $y = 55 + 0.25x$ — y = phone bill; x = minute
5. $y = 0.06x$ — y = amount you owe; x = price
6. $y = x - 2$
7. $y = 1.5x$

Write an equation and define your variables to model each situation.

A Regular Polygon has sides that are equal in length. The perimeter of a Regular Pentagon is a function of the length of each side.

'eople have pledged a total

= x

Q: $y = 5x$ Variables: = y

3. The amount of money in your account is a function of how many deposits you've made. You had $136 in your account then deposit $15 each week.

EQ: Variables:

4. The amount of your phone bill each month is a function of the number of minutes beyond 100 that you use each month. Your phone company has the following charges: $55 per month plus $0.25 for every minute after the first 100 minutes each month.

EQ: Variables:

5. The amount of tax you owe in the State of Michigan when you purchase an item is a function of the price of the item. The sales tax in Michigan is 6%.

EQ: Variables:

6. EQ: $y =$

X	Y
−3	−5
−1	−3
1	−1
4	2
7	5

7. EQ: $y =$

X	Y
−4	−6
−2	−3
0	0
6	9
8	12

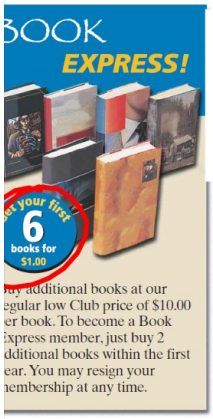
Hwk #31 Answers:

Alg 1
11-26-18

4. $y = 3x$
5. $f(x) = x - 0.5$
6. $y = 0.5x$ or $\frac{x}{2}$
12. $f(h) = \frac{h}{12}$
13. $e(n) = 6.37n$
14. $A(n) = n^2$
21. a. $C(a) = 10a + 1$
    b. 9 books cost $31
    c. $C(6) = 61$ →total cost of 12 books

he height $f(h)$ of an object in feet when you know the height h in inches

13. 14. the area $A(n)$ of a square



21. a. Write a rule to find the total cost $C(a)$ for all the books a person buys through Book Express. Let a represent the number of additional books bought (after the first 6 books).

b. Suppose a person buys 9 books in all. Find the total cost.

c. Evaluate the function for $a = 6$. What does the output represent?

4. 5. 6.

x
1
2
3
4

$C(a) = 10a + 1$

$= 10(3) + 1$

$31

Section 5.4 Cont...

Writing Function Rules

- Groups of three: complete the following practice activity worksheet.
- Make sure to answer each question completely. SHOW YOUR WORK!
- State your reasonining for the appropriate questions, in complete sentences.

1. You went shopping at Fairlane Mall and bought a pair of jeans for $25.00 and spent $20 per shirt. Write a rule to describe the total cost, f(x), and amount of shirts, x.

a) What is the function rule? $f(x) = 25 + 20x$

b) What would be the total cost if you bought 15 t-shirts? $25 + 20(15) = \$325$

2. The Class of 2016 donated a tree to HFEC and it was 10 centimeters tall when it was first planted. Since then, it has grown approximately 0.50 centimeters per day.

a) Write a rule to describe this function: $f(x) = 0.5x + 10$

b) After 90 days how tall will the tree be? 55 cm.

c) *Challenge* After how many days will the tree be 18 centimeters tall?

16 days

3. A t-shirt company charges a $30 screening fee and $8 for each t-shirt we want printed.

a) Create a function rule to describe this situation:

$y = 30 + 8x$

b) What is our total cost if we bought 657 t-shirts for the freshmen class?

$5286

4. Joseph is in the business of repairing home computers. He charges a base fee of $45 for each visit and $25 per hour for his labor. Create a function rule to show the relationship between the total cost, f(x), and hours, x.

1. Function Rule : $f(x) = 45 + 25x$

2. What did you define the variables:

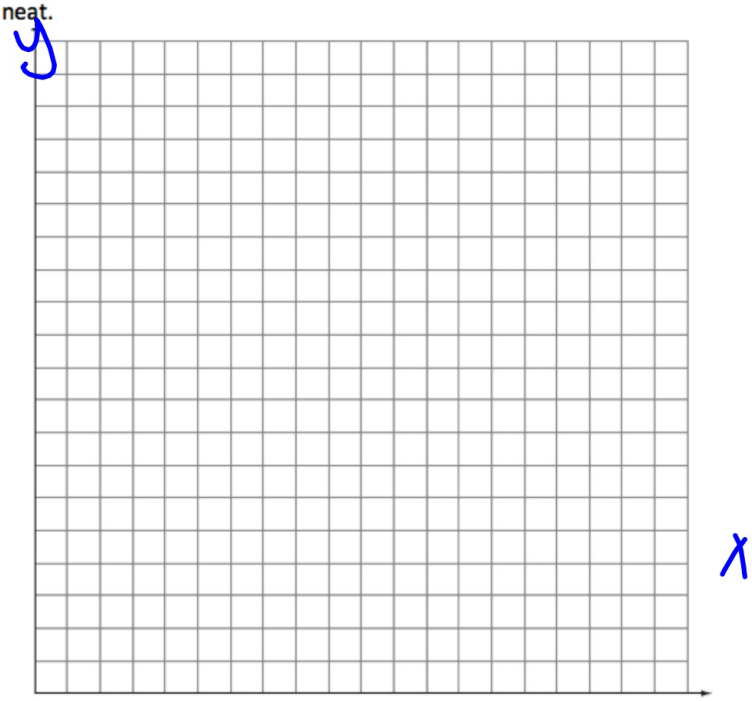
x: hrs

y: cost

3. Complete the table

X	$y = 45+25(X)$	Y	(x,y)
0	$= 45+25(0)$	45	(0,45)
2		95	(2,95)
4		145	(4,145)
6		195	(6,195)
8		245	(8,245)

4. Graph. Make sure axis' are labeled, intervals are accurate, and line is neat.



5. Answer the following questions:

MUST USE COMPLETE SENTENCES & SHOW WORK ON THE BACK.

a) Which direction is your graph going?

Positive

b) Where does the graph intersect the y-axis?

(0, 45)

c) What would be unreasonable data for this problem?

x cant be repeated cant be neg.

d) What would be the total cost be if Joe worked 20 hours?

$f(20) = 45 + 25(20)$

$= \$545$

e) What would be the total cost be if Joe worked 15 hours?

$= \$420$

f) How can you use the graph to help you find the answers to d & e?

find slope

g) How many hours would Joe have to work if he made $220?

→ = y

7 hrs

Hwk #32 - Practice 5.4 Worksheet

IXL #13 - Q.2 & Q.10 due Friday at 4pm!