

Warmup 10/(# of days in February in a leap year)

3 parts for each:

a) Say if it is a function (yes/no)

(This is Week 3!)

b) Say if it is linear.

c) Say if it is proportional.

1)

x	y
0	11
3	7
6	3
9	-1

2)

x	y
1	13
2	16
3	19
3	22

3)

x	Y
3	12
4	16
5	20
6	24

4)

x	Y
0	0
2	6
4	16
4	16

5) Pick one of the tables and write a $y = mx + b$ equation for it.

Back to this problem...

Question 34

Jana wrote the ordered pairs $(2, 2)$, $(4, 3)$, and $(10, 6)$. These ordered pairs satisfy a linear function.

Which ordered pair satisfies the **same** linear function?

- A) $(12, 8)$
- B) $(14, 7)$
- C) $(20, 11)$
- D) $(24, 16)$

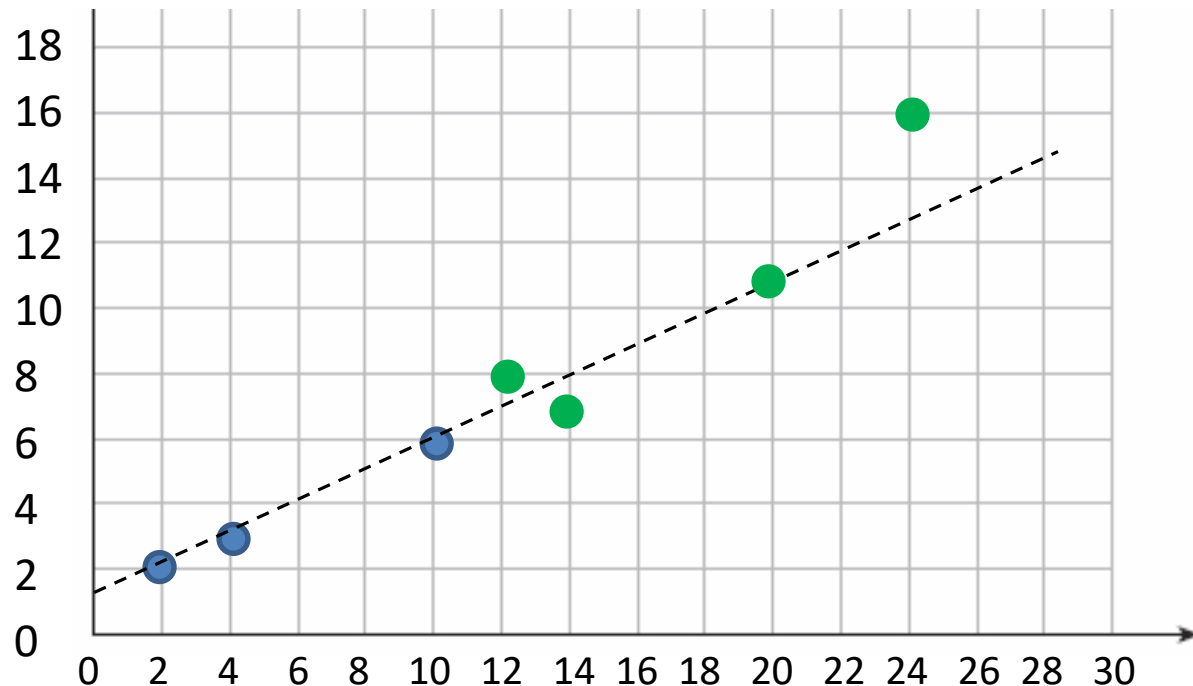
Think outside the box. There are MANY ways you can solve this problem!!!

Strategy 1: Use a graph (probably won't be precise enough unless you have graph paper!)

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Strategy 2: Use a table

Jana wrote the ordered pairs (2, 2), (4, 3), and (10, 6). These ordered pairs satisfy a linear function.

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A) (12, 8)

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D) (24, 16)

<u>x</u>	<u>y</u>
2	2
4	3
6	4
8	5
10	6
12	7
14	8
16	9
18	10
20	11

**Linear = Constant
Rate of Change
for X AND Y**

**Every time x
increases by 2, y
increases by 1**

Strategy 3: Figure out the EQUATION

Jana wrote the ordered pairs (2, 2), (4, 3), and (10, 6). These ordered pairs satisfy a linear function.

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A) (12, 8)

B) (14, 7)

C) (20, 11)

D) (24, 16)

0 1

x y

2 2

4 3

6 4

8 5

10 6

$$\begin{aligned}\text{Slope} &= \frac{\text{change in } y}{\text{change in } x} \\ &= \frac{1}{2}\end{aligned}$$

EQUATION:

$$y = \frac{1}{2}x + 1$$

Now test the rule out for each choice! It only works

for C. $\frac{1}{2}(20) + 1 = 11$.

Strategy 4: Use the slope formula

Jana wrote the ordered pairs (2, 2), (4, 3), and (10, 6). These ordered pairs satisfy a linear function.

Which ordered pair satisfies the **same** linear function?

A) (12, 8)

B) (14, 7)

C) (20, 11)

D) (24, 16)

$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{3 - 2}{4 - 2}$$

$$= \frac{1}{2}$$

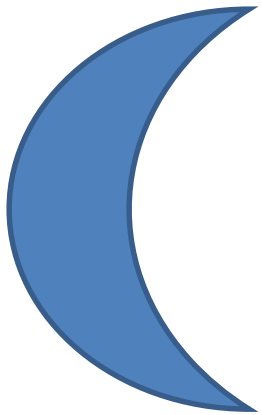
Then test each choice. It doesn't matter which original point you pick!

$$\text{A: } \frac{8 - 2}{12 - 2} = \frac{6}{10} \quad \times$$

$$\text{C: } \frac{11 - 2}{20 - 2} = \frac{9}{18} = \frac{1}{2} \quad \checkmark$$

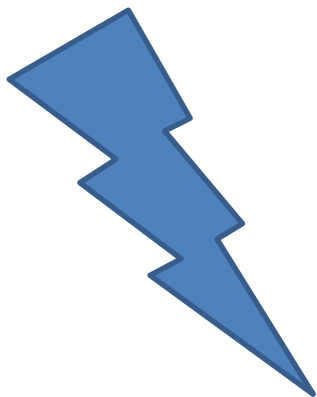
Today:

- More story problems in groups.
- This time, they will be posted around the room. You and your group will be able to do them in any order, at your own pace.
- Use your own paper. Organize your work and label each problem. Each person must show all work. Circle your answers.
- **HELP EVERYONE IN YOUR GROUP UNDERSTAND!!!**
- Early finishers: work on/compare answers on the homework.



A giant icicle has formed on the roof of the Lischwe house. The icicle is originally 3 feet long. However, the temperature is warming up, and it melts 3 inches every week.

- a) Write an equation to model the length of the icicle.**
- b) Create an x/y table.**
- c) If you graphed the values in the table, would you connect the dots? Why/why not?**
- d) The inputs represent:**
- e) The outputs represent:**
- f) The slope is ____ and it represents:**
- g) The y-intercept is ____ and it represents:**

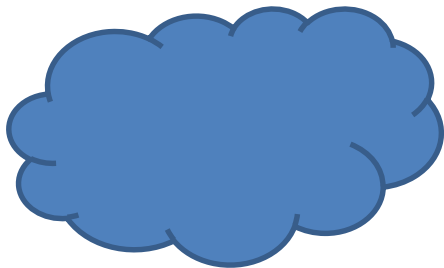


Rick will participate in a walk-a-thon to raise money for charity. The amount he will raise based on the number of miles he walks is shown in the table, which represents a linear function.

Which of the statements is correct? Select ALL that apply.

Miles Walked	Amount Raised (\$)
2	220
5	460
8	700
11	940

- ☐ **A** If Rick walks 0 miles, he will raise \$0.
- ☐ **B** If Rick walks 0 miles, he will raise \$60.
- ☐ **C** If Rick walks 0 miles, he will raise \$80.
- ☐ **D** For each mile that Rick walks, he will raise an additional \$60.
- ☐ **E** For each mile that Rick walks, he will raise an additional \$80.
- ☐ **F** For each mile that Rick walks, he will raise an additional \$110.



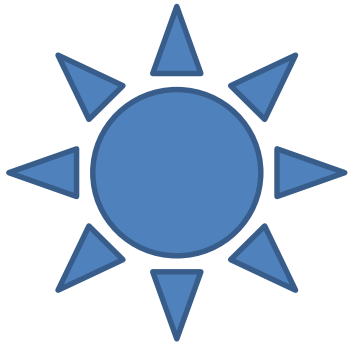
Car A: $d = 60h + 20$

Car B:

h	d
0	60
2	160
4	260

Two cars are traveling along the same highway, each at a constant rate. For both cars, “h” represents the number of hours spent driving, and “d” represents the distance, in miles, from San Francisco. Select all statements that are true.

- A** Car A is traveling at the same rate, in miles per hour, as Car B.
- B** Car A is traveling at a faster rate, in miles per hour, than Car B.
- C** Car A is traveling at a slower rate, in miles per hour, than Car B.
- D** Car A is originally closer to San Francisco than Car B.
- E** Car A is originally at the same distance from San Francisco as Car B.
- F** Car A and Car B are at the same distance away from San Francisco after 4 hours.



Bill & Will's Candy

- Bill had a giant bag of Skittles, and Will had a giant bag of M&Ms. Both feeling generous, they started giving out candy. After giving skittles to 10 people, Bill had 220 skittles left. After giving skittles to 15 people, Bill had 180 skittles left. Will gave out 12 M&Ms to each person, and after giving M&Ms to 20 people, he had 174 M&Ms left. Assume they each were giving out candy at a constant rate. (same # of pieces per person)
- **A) Whose bag started with more candy? How many more pieces did that bag have?**
- **B) Who can give candy to more people before they run out? How many people can this person give candy to?**

Story Problem Worksheet due
tomorrow!!!