Test May 14 Review

Name_____

Write an equation. Solve.

1. Phil rides his bike at 22 mph. He's gone 100 miles already. How long will it take him to finish a 166 mile race?

$22x + 100 = 166$

$-100 \quad -100$

$\frac{22x}{22} = \frac{66}{22}$

$x = 3$ hrs

2. John saves 6 quarters a day from the coffee shop. He already has $10 for the week. How long will it take him to save $21?

6 quarters = $1.50

Also $6x + 10 = 21$

$1.5x + 10 = 21$

$-10 \quad -10$

$\frac{1.5x}{1.5} = \frac{11}{1.5}$

$x = 7.3$

7 days

3. A tree grows at 9 inches a year. It's already 10 feet tall. How long will it take it to grow to 13 feet?

1st

$\frac{3}{4}x + 10 = 13$

$-10 \quad -10$

$\frac{4}{3} \cdot \frac{3}{4}x = 3 \cdot \frac{4}{3}$

$x = 4$ years

2nd

$9x + 120 = 156$

$-120 \quad -120$

$\frac{9x}{9} = \frac{36}{9}$

$x = 4$ years

4. Coffee is brewing. The coffee maker can make 100 ml every minute. There's already 500 ml in the container. How long will it take to make 1 liter?

1st

$100x + 500 = 1000$

$-500 \quad -500$

$\frac{100x}{100} = \frac{500}{100}$

$x = 5$ min

2nd

$\frac{1}{10}x + \frac{1}{2} = 1$

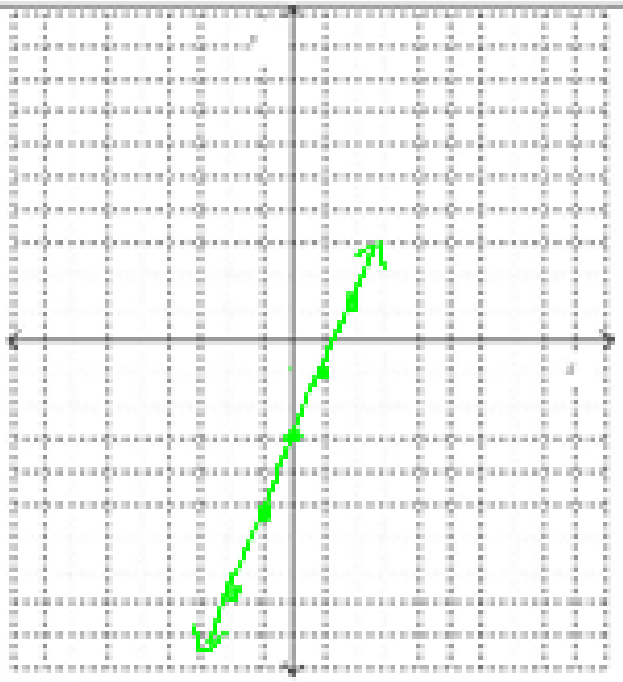
$-\frac{1}{2} \quad -\frac{1}{2}$

$10 \cdot \frac{1}{10}x = \frac{1}{2} \cdot 10$

$x = 5$ min

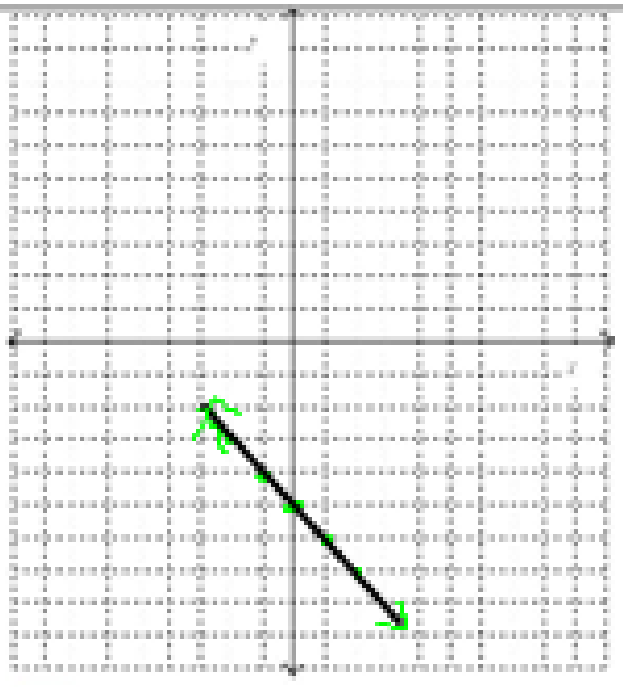
5.

x	y = 3x - 4	y
-2	$3(-2) - 4$ $-6 - 4$	-10
-1	$3(-1) - 4$	-7
0		-4
1	$3(1) - 4$	-1
2	$3(2) - 4$	2



6.

x	y = -x - 5	y
-2	$-(-2) - 5$ $2 - 5$	-3
-1	$-(-1) - 5$	-4
0		-5
1	$-1 - 5$	-6
2	$-2 - 5$	-7



7. Here's some data on a football manufacturer.

Hours	3	6	9
# of footballs	21	42	63

Write an expression that represents this (Number of footballs per hour).

Use the expression to determine how many footballs the manufacturer could make in 16 hours.

How long did it take to make 300 footballs?

8. Here's some data on a road trip:

Miles	260	520	1040
Hours	5	10	20

Write an expression that represents this (Miles per hour)

Use the expression to find out how many miles traveled in 25 hours.

How long will it take to go 2600 miles.

9. Here's some data on snowfall:

Inches	3	6	9
Hours	2	4	6

Write an expression that represents this (Inches per hour)

$y = 1.5x$

$\frac{3}{2} = \frac{x}{1}$

Use the expression to determine how many Inches will fall in one day.

24 hrs

$y = 1.5x$

$y = 1.5(24)$

How long will it take for 50 inches to fall?

$y = 1.5x$

$\frac{50}{1.5} = \frac{1.5x}{1.5}$

$x = 33.3$ hrs

10. Here's some data on the number of cars flowing through an intersection.

Minutes	7	14	21
# of cars	20	40	60

Write an expression that represents this (cars per minute).

$\frac{7}{20} = \frac{1}{c}$

$c = \frac{20}{7}$

$y = \frac{20}{7}x$

$y = 2.8x$

Use the expression to determine the number of cars in 30 minutes.

$y = 2.8(30)$

$y = 84$ cars

How long will it take 200 cars to pass through the intersection?

$y = 2.8x$

$\frac{200}{2.8} = \frac{2.8x}{2.8}$

$x = 71.4$ min

Solve the equation for the given variable. SHOW ALL WORK OR NO CREDIT!

11) $8x = -3x + 14$

$+3x \quad +3x$

$11x = 14$

$\frac{11x}{11} = \frac{14}{11}$

$x = \frac{14}{11}$

12) $-4x - 3 + 7x = x + 8$

$3x - 3 = x + 8$

$-x \quad -x$

$2x - 3 = 8$

$+3 \quad +3$

$2x = 11$

$\frac{2x}{2} = \frac{11}{2}$

$x = \frac{11}{2}$

13) $-10(3x - 2) = -7x - 8$

$-30x + 20 = -7x - 8$

$+7x \quad +7x$

$-23x + 20 = -8$

$-20 \quad -20$

$\frac{-23x}{-23} = \frac{-28}{-23}$

$x = \frac{28}{23}$

14) $23x + 2 - 7x = 15 - 6x$

$16x + 2 = 15 - 6x$

$+6x \quad +6x$

$22x + 2 = 15$

$-2 \quad -2$

$\frac{22x}{22} = \frac{13}{22}$

$x = \frac{13}{22}$

15) $-14x + 2 - 14x = -28x + 3$

$-28x + 2 = -28x + 3$

$+28x \quad +28x$

$2 \neq 3$

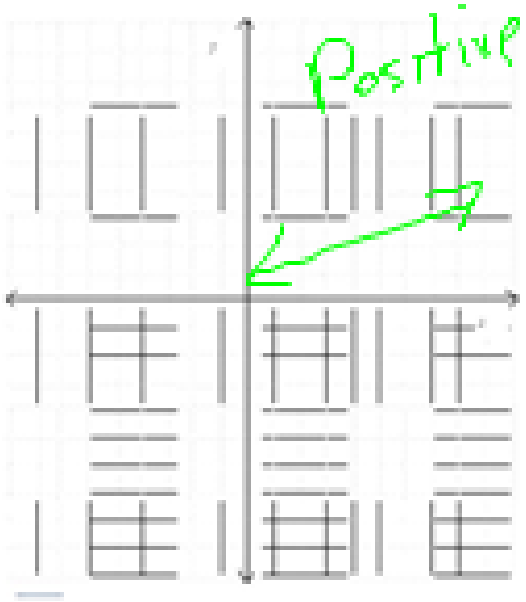
No Solution

16) $7x + 3 = 7x + 3$

Same on both sides

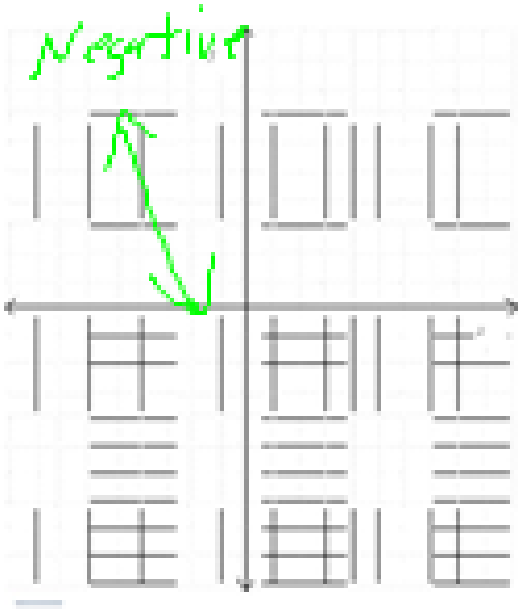
Infinite Solutions

17. Determine the slope of the line.



Slope_____

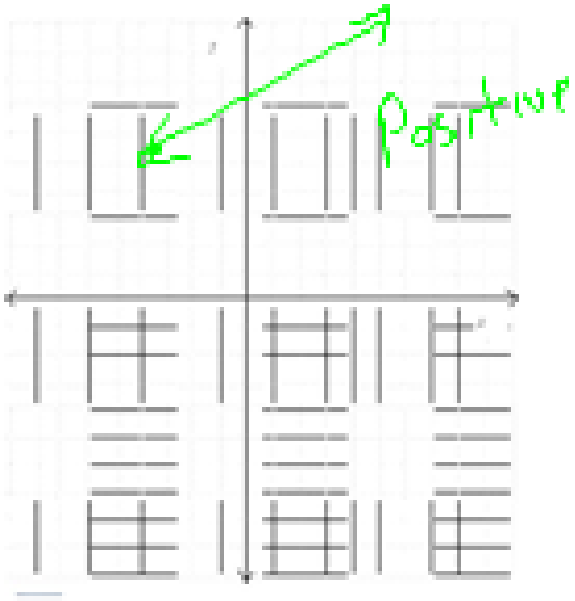
18. Determine the slope of the line.



Slope_____

19.

Draw a line from (-3, 4) with a slope of $\frac{2}{5}$



20.

Draw a line from (1, -3) with a slope of $-\frac{5}{3}$