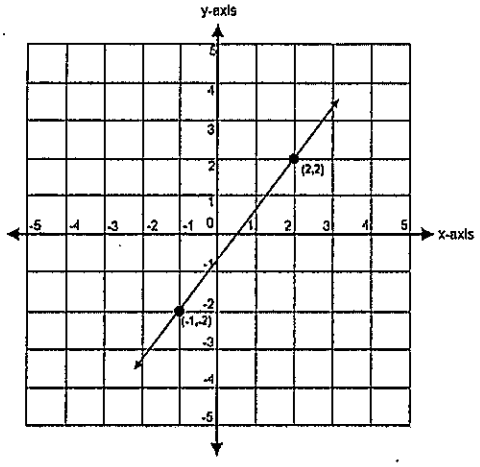
Name _____ Date _____

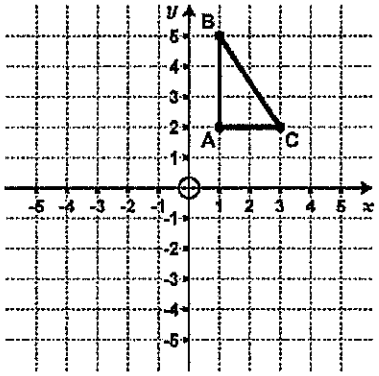
Final Exam Part I Quiz EXTRA Review

1. What is the rate of change of the line graphed below?



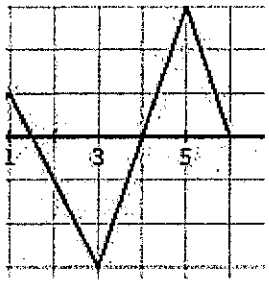
2. Point A has a coordinate of (3, -9). After a dilation, the coordinated of point A' are (18, -54). What is the scale factor?

3. Triangle ABC is translated 2 units right and 4 units down. What are the new coordinates of A'?



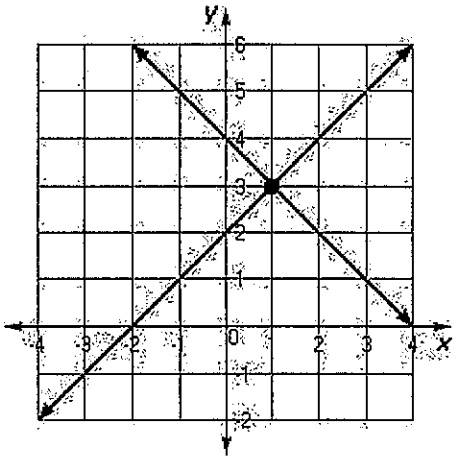
4. Write the equation of a line that goes through the points (1, 6) and (0, 3).

5. In which interval is the function linear and increasing?

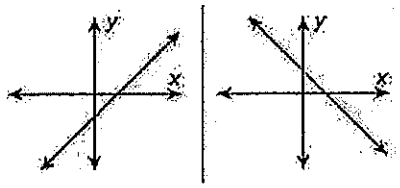


From x = _____ to x = _____

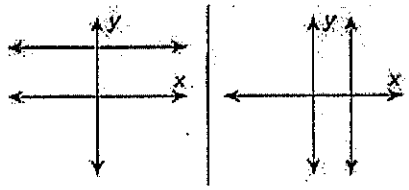
6. What is the solution of the following system of equations?



7. Label the slopes as zero, undefined, positive, or negative.



a. _____ b. _____



c. _____ d. _____

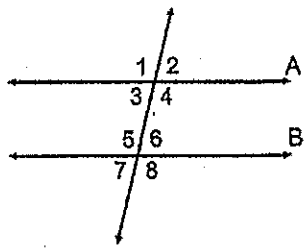
8 . Does the point (4, 3) lie on the line $y = 10x - 8$?

9. Michael's weekly earnings are described by the equation y = 6x + 70, where x is the number of hours he works. If Michael earned $430 in one week, how many hours did he work?

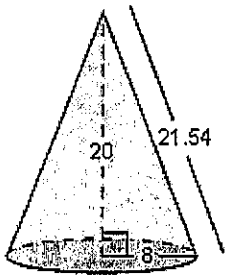
10. How many solutions does the equation $8x + 5 = 8x - 3$ have?

11. What is .00587 expressed in scientific notation?

12. In the diagram below, the m< 3 is 20°. What is the m<6?

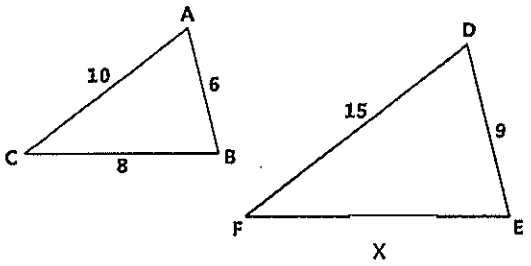


13. Find the volume of the cone. Round to the nearest tenth if needed.

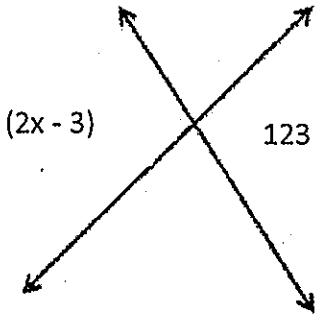


14. Is $\frac{4}{5}$ rational or irrational?

15. Find the value of x if triangle ABC is similar to triangle DEF.



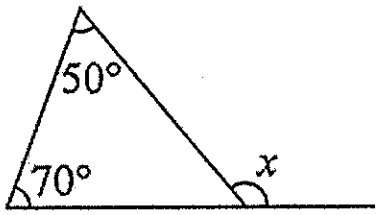
16. Find the value of x in the diagram below.



17. Evaluate $y^9 \cdot y^{-3} \cdot y$

18. If two legs of a right triangle measure 9 inches and 12 inches, what is the measure of the hypotenuse?

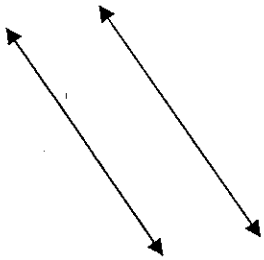
19. What is the value of x in the diagram shown?



20. Does the relation below represent a function?

$\{(2, 5), (3, 15), (4, -3), (-2, 1), (1, 6)\}$

21. How many solutions does the following system have?



22. What is the solution to the equation below?

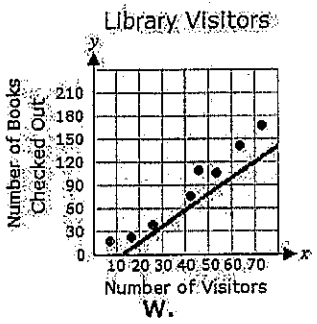
$$\frac{2}{5}(5x - 20) = 12$$

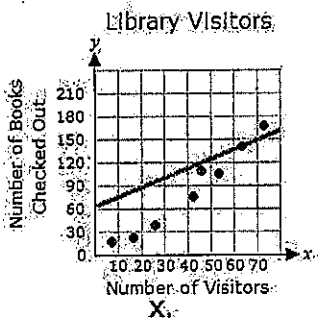
23. Solve for h.

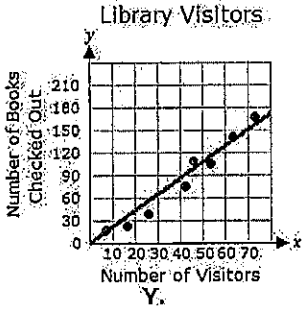
$$h^3 = 216$$

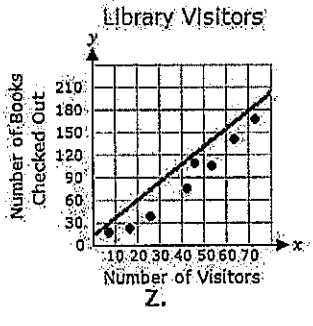
24. If Justin walks a speed of 17.4 miles in 3 hours, how many miles does Justin walk in one hour?

25. Which graph shows a line of best fit for the scatter plot?

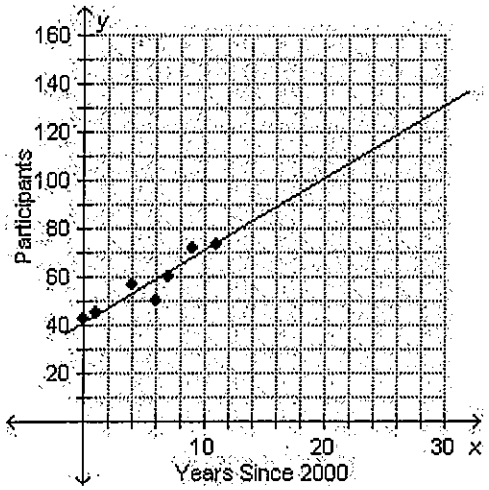




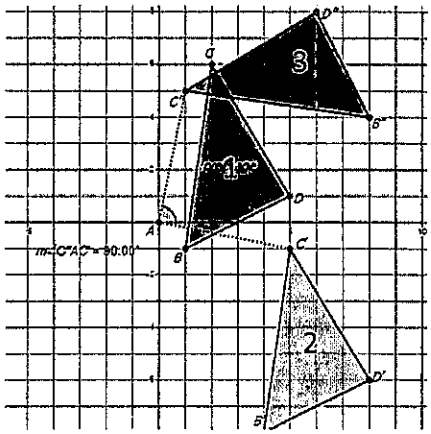




26. Using the trend line, approximately how many participants will there be 20 years after the year 2000?



27. Which sequence of transformations maps figure 1 onto figure 2, and then figure 2 onto figure 3?



1. _____

2. _____

28. Solve for x and y for the system shown.

$$5x - 7y = -19$$
$$7x + 7y = 7$$

29. Solve for x.

$$4.4x + 2.6 = 3.6x + 8.2$$

30. Mr. Jones is buying two types of gift cards to give as prizes to employees at a company meeting. He will buy restaurant gift cards that each cost $50. He will also buy movie theater gift cards that each cost $20. He has $450 to buy a total of 15 gift cards. How many of each type of gift cards can Mr. Jones buy?

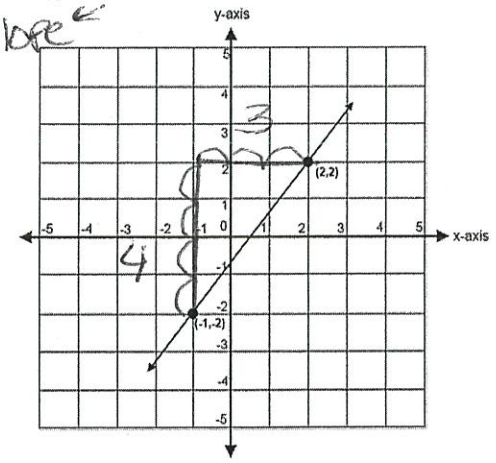
a. 5 restaurant and 10 movie
b. 10 restaurant and 5 movie
c. 12 restaurant and 3 movie
d. 3 restaurant and 12 movie

Name _____ Date _____

Final Exam Part I Quiz EXTRA Review

1. What is the rate of change of the line graphed below?

slope



$m = \frac{\text{rise}}{\text{run}}$

$m = \frac{4}{3}$

2. Point A has a coordinate of (3, -9). After a dilation, the coordinated of point A' are (18, -54). What is the scale factor?

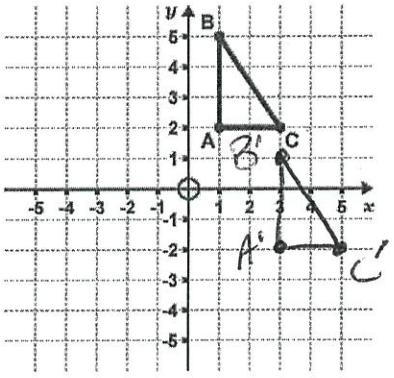
→ # multiplied

(3, -9) $\xrightarrow{\times 6 \quad \times 6}$ (18, -54)

Scale factor = 6

3. Triangle ABC is translated 2 units right and 4 units down. What are the new coordinates of A'?

A'(3, -2)



4. Write the equation of a line that goes through the points (1, 6) and (0, 3).

→ b

$y = mx + b$

$m = 3$

$b = 3$

$y = 3x + 3$

(1, 6) (0, 3)

$x_1 y_1$ $x_2 y_2$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{3-6}{0-1}$

$m = \frac{-3}{-1}$ $m = 3$

$y = mx + b$ (1, 6) $m = 3$

$x \quad y$

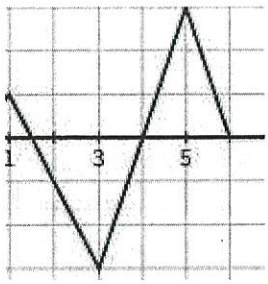
$6 = (3)(1) + b$

$6 = 3 + b$

$-3 \quad -3$

$3 = b$

5. In which interval is the function linear and increasing?

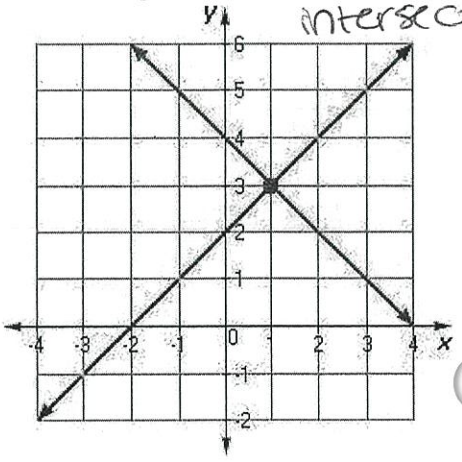


From x = 3 to x = 5

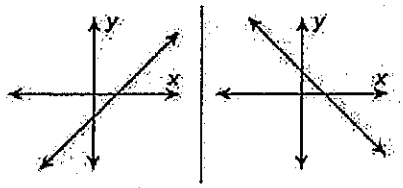
6. What is the solution of the following system of equations?

→ where the lines intersect

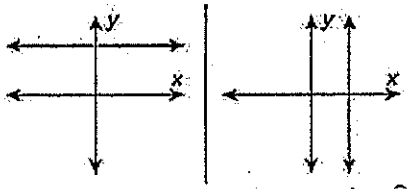
(1, 3)



7. Label the slopes as zero, undefined, positive, or negative.



a. positive b. negative



c. zero d. undefined

8. Does the point (4, 3) lie on the line $y = 10x - 8$?

x y ~~check~~

$3 = 10(4) - 8$

$3 = 40 - 8$

$3 \neq 32$

NO!

9. Michael's weekly earnings are described by the equation y = 6x + 70, where x is the number of hours he works. If Michael earned $430 in one week, how many hours did he work?

y

$y = 6x + 70$

$430 = 6x + 70$

$-70 \quad -70$

$360 = 6x$

$\frac{360}{6} = \frac{6x}{6}$

$x = 60$

10. How many solutions does the equation $8x + 5 = 8x - 3$ have?

$8x + 5 = 8x - 3$

$-8x \quad -8x$

$5 \neq -3$

No solution

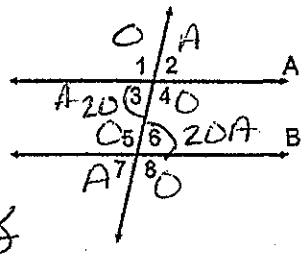
11. What is .00587 expressed in scientific notation?

2nd | DRG |] SCI

5.87×10^{-3}

12. In the diagram below, the m< 3 is 20°. What is the m<6?

$m\angle 6 = 20°$



Every acute ∠ = every other acute ∠.

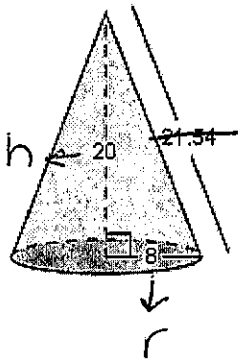
13. Find the volume of the cone. Round to the nearest tenth if needed.

$V = \frac{1}{3}\pi r^2 h$

$V = \frac{1}{3} \cdot \pi \cdot 8^2 \cdot 20$

$V = \frac{1}{3} \cdot \pi \cdot 64 \cdot 20$

$V = 1340.4\ u^3$

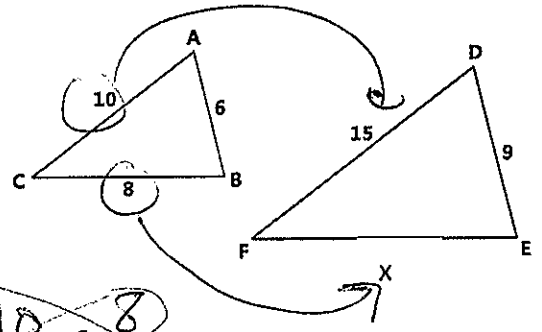


14. Is $\frac{4}{5}$ rational or irrational?

Rational

Fractions are always rational

15. Find the value of x if triangle ABC is similar to triangle DEF.



$\frac{10}{15} = \frac{8}{x}$

$\frac{120}{10} = \frac{10x}{10}$

$x = 12$

OR

$\frac{6}{9} = \frac{8}{x}$

$\frac{6x}{6} = \frac{72}{6}$

$x = 12$

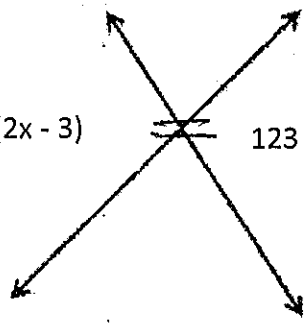
16. Find the value of x in the diagram below.

$2x - 3 = 123$

$+3 \quad +3$

$\frac{2x}{2} = \frac{126}{2}$

$x = 63$



17. Evaluate $y^9 \cdot y^{-3} \cdot y^1$ ← exponent of 1

$y^{9+(-3)+1} = y^7$

★ Keep the base, add the exponents

18. If two legs of a right triangle measure 9 inches and 12 inches, what is the measure of the hypotenuse?

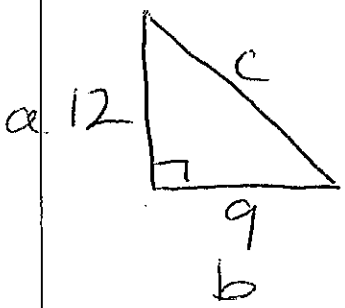
$a^2 + b^2 = c^2$

$12^2 + 9^2 = c^2$

$144 + 81 = c^2$

$\sqrt{225} = \sqrt{c^2}$

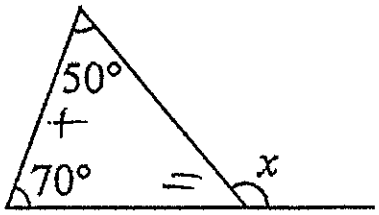
$c = 15$ in.



19. What is the value of x in the diagram shown?

$x = 50 + 70$

$\boxed{x = 120^\circ}$

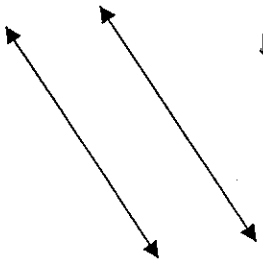


20. Does the relation below represent a function?

$\{(2, 5), (3, 15), (4, -3), (-2, 1), (1, 6)\}$

yes- the x-values do not repeat

21. How many solutions does the following system have?



0 Solutions

B/C the lines don't intersect!

22. What is the solution to the equation below?

$\frac{2}{5}(5x - 20) = 12$

ABC

D

C

M

S

$2x - 8 = 12$

$+8 \quad +8$

$\frac{2x}{2} = \frac{20}{2}$

$\boxed{x = 10}$

23. Solve for h. $\sqrt[3]{h^3} = \sqrt[3]{216}$

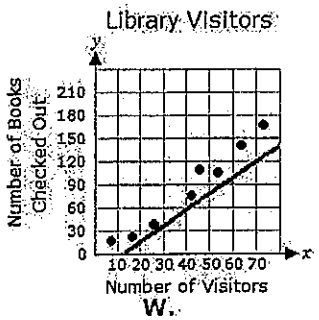
$\boxed{h = 6}$

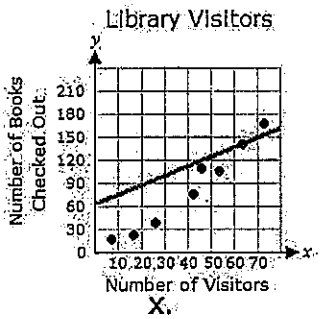
3 | 2nd | n

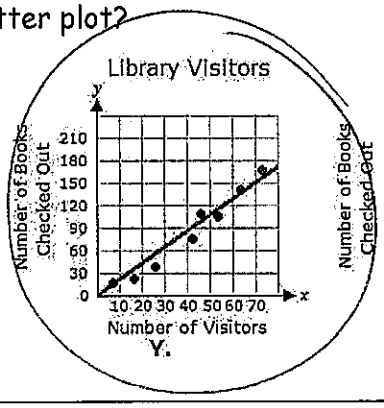
24. If Justin walks a speed of 17.4 miles in 3 hours, how many miles does Justin walk in one hour?

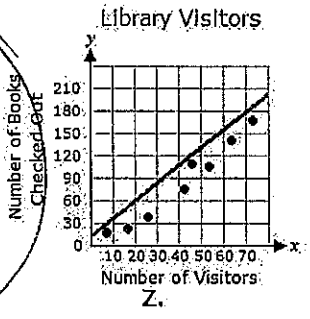
$\frac{17.4}{3} = \boxed{5.8 \text{ mph}}$

25. Which graph shows a line of best fit for the scatter plot?









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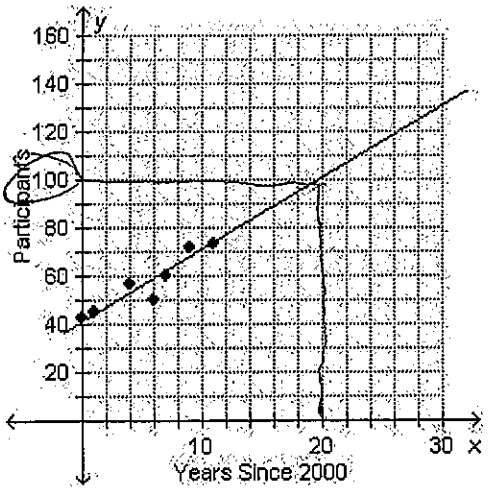
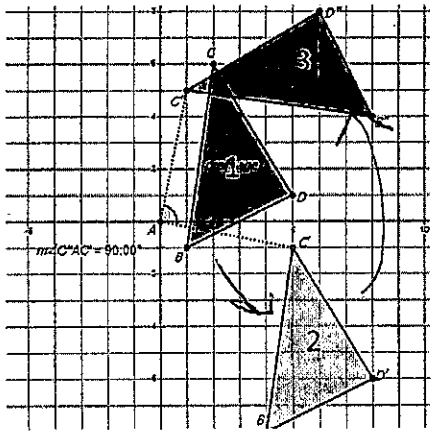


100

27. Which sequence of transformations maps figure 1 onto figure 2, and then figure 2 onto figure 3?



1. Translation
2. Rotation

28. Solve for x and y for the system shown.

$$\begin{array}{r} 5x - 7y = -19 \\ +\ 7x + 7y = 7 \end{array}$$

$12x = -12$

$\frac{12x}{12} = \frac{-12}{12}$

$x = -1$

(-1, 2)

$5x - 7y = -19$

$5(-1) - 7y = -19$

$-5 \quad -7y = -19$

$+5 \quad +5$

$\frac{-7y}{-7} = \frac{-14}{-7}$

$y = 2$

29. Solve for x.

$4.4x + 2.6 = 3.6x + 8.2$

$-3.6x \quad -3.6x$

$0.8x + 2.6 = 8.2$

$-2.6 \quad -2.6$

$\frac{0.8x}{0.8} = \frac{5.6}{0.8}$

$x = 7$

30. Mr. Jones is buying two types of gift cards to give as prizes to employees at a company meeting. He will buy restaurant gift cards that each cost $50. He will also buy movie theater gift cards that each cost $20. He has $450 to buy a total of 15 gift cards. How many of each type of gift cards can Mr. Jones buy?

a. 5 restaurant and 10 movie
b. 10 restaurant and 5 movie
c. 12 restaurant and 3 movie
d. 3 restaurant and 12 movie

$50 \times 5 = 250$ $\quad 20 \times 10 = 200$ $\quad 250 + 200 = 450$ ✓