Whittier Tech

Grade 10:
CP1/2 Algebra II/Geometry
Summer Project

CP1/2 Algebra II/ Geometry Name_____

Summer Project

Evaluate each expression.

1) $1 + (-5)$

2) $(6 \cdot 2) \div 6$

3) $(3 \cdot 6 - 4 \cdot 3) \cdot 5$

4) $6 + 2 + 2 + 6 - 18 \div 6$

Simplify each expression.

5) $p - 9(-10p + 7)$

6) $7(n + 8) - (-n + 1)$

Solve each equation.

7) $-180 = -12n$

8) $-61 = 4x - 5$

9) $-7x - 7(x + 1) = 105$

10) $5x - 6 + 8 = -5x - 8$

Solve each proportion.

11) $\frac{10}{7} = \frac{2}{x}$

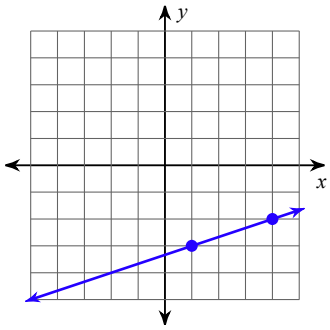
12) $\frac{k - 2}{4} = \frac{8}{2}$

13) $\frac{9}{6} = \frac{v + 7}{v}$

14) $\frac{6}{4} = \frac{r + 5}{r + 10}$

Find the slope of each line.

15)



Find the slope of the line through each pair of points.

16) $(-16, -1), (0, -9)$

Find the slope of each line.

17) $y = -\frac{3}{4}x - 1$

18) $4x - 5y = 10$

Find the slope of a line parallel to each given line.

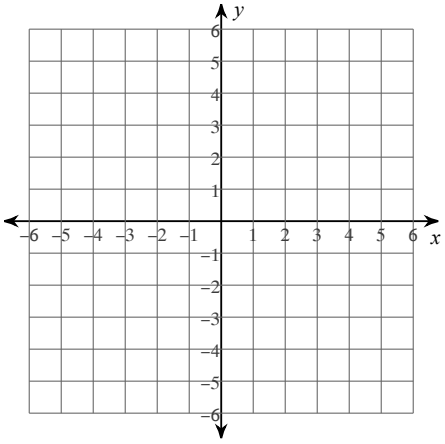
19) $y = \frac{4}{5}x + 3$

Find the slope of a line perpendicular to each given line.

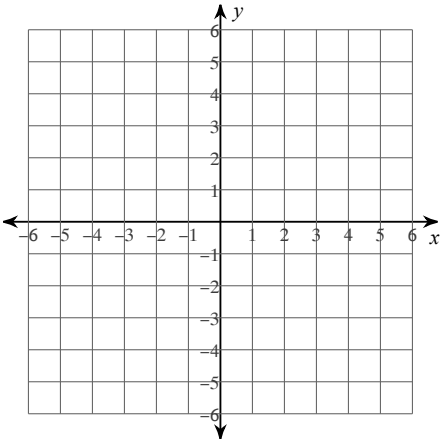
20) $y = \frac{1}{2}x + 3$

Sketch the graph of each line.

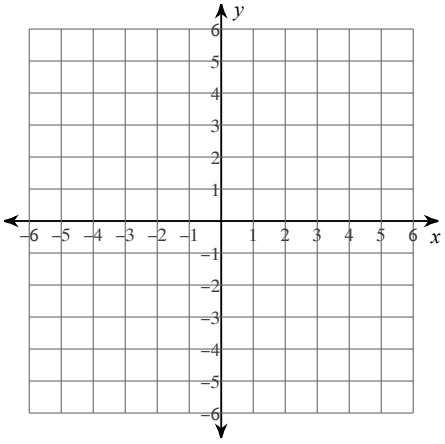
21) x-intercept = 5, y-intercept = -1



22) $y = \frac{1}{5}x - 1$

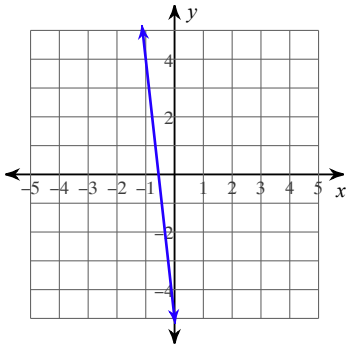


23) $2x - y = 3$



Write the slope-intercept form of the equation of each line.

24)



25) $5x - 3y = 12$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

26) through: $(-5, 3)$, slope $= -\frac{1}{5}$

Solve each system by elimination.

27) $8x + 7y = -1$
$-9x - 14y = -5$

28) $-5x - 8y = -6$
$-7x - 6y = -24$

Solve each system by substitution.

29) $y = x + 6$
$-x - y = -8$

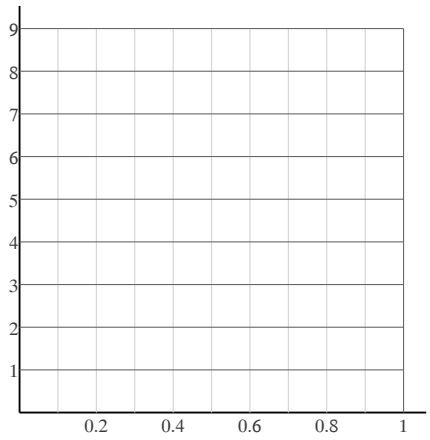
Construct a scatter plot. State if there appears to be a positive correlation, negative correlation, or no correlation. When there is a correlation, identify the relationship as linear, quadratic, or exponential.

30)

X	Y
0.1	2.1
0.3	3.1
0.3	3.7
0.4	4.1

X	Y
0.4	4.2
0.5	5.7
0.8	7.5

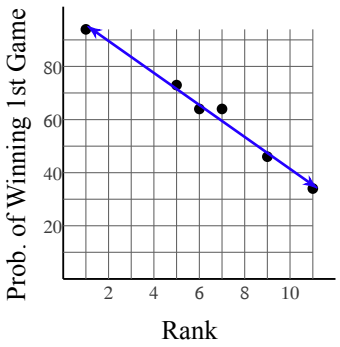
X	Y
0.8	7.8
0.9	8.5
0.9	8.5



31) By examining past tournaments, it's possible to calculate the probability that a school wins their first game in the national college basketball tournament.

Rank	Probability (%)
1	94
5	73
6	64
7	64
9	46
11	34

Each school's rank going into the tournament is a strong indicator of their likelihood of winning their first game. This can be expressed as $y = -6.03x + 102$ where x is their rank (out of 16) and y is the percent chance they have of winning their first game.



a) What does the slope of the line represent?

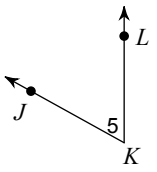
b) What does the y-intercept of this function represent?

c) According to the model, a school ranked #4 has what probability of winning their first game?Round your answer to the nearest percent.

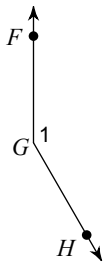
d) Using this model, a school ranked #13 has what probability of winning their first game? Round your answer to the nearest percent.

Name each angle in four ways.

32)

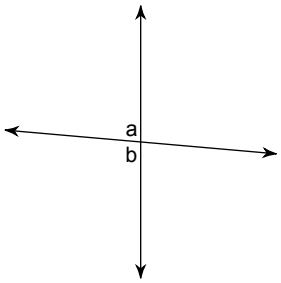


33)

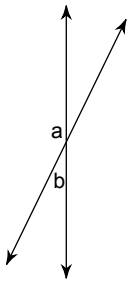


Name the relationship: complementary, linear pair, or vertical.

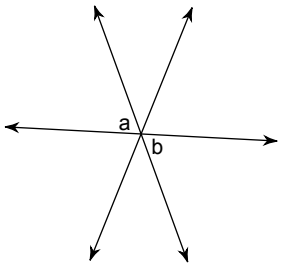
34)



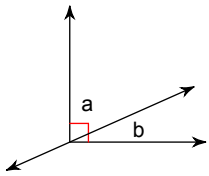
35)



36)

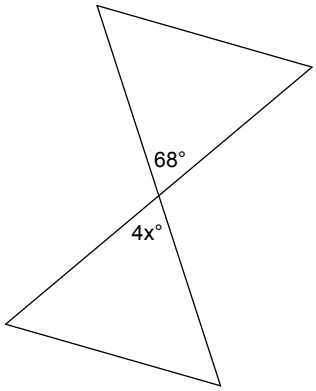


37)

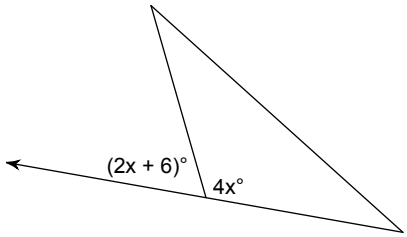


Find the value of x.

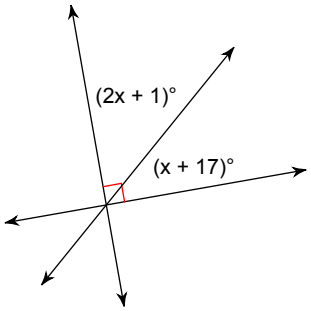
38)



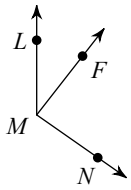
39)



40)

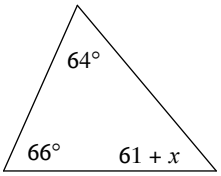


41) Find x if $m\angle LMF = x + 48$, $m\angle LMN = 125°$, and $m\angle FMN = x + 97$.

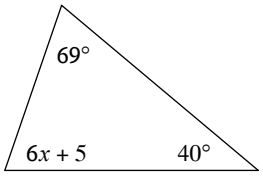


Solve for *x*.

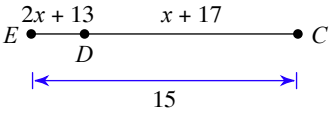
42)



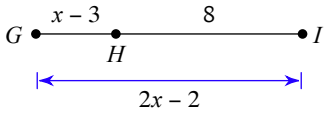
43)



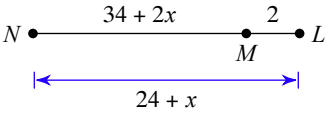
44)



45)

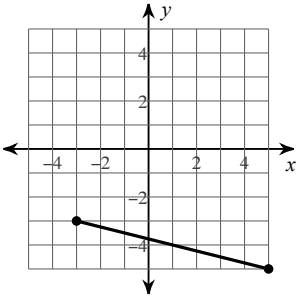


46)



Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

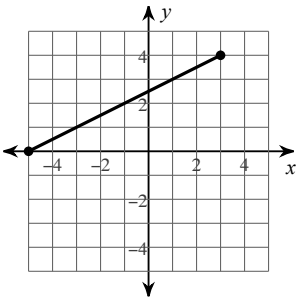
47)



48) $(1, -3)$, $(3, -1)$

Find the midpoint of each line segment.

49)



Find the midpoint of the line segment with the given endpoints.

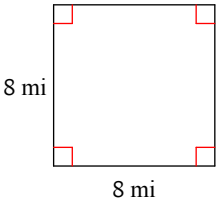
50) $(7, -8)$, $(-3, 6)$

Find the other endpoint of the line segment with the given endpoint and midpoint.

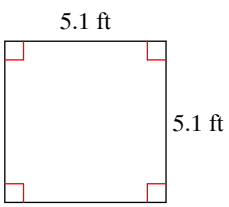
51) Endpoint: $(8, 9)$, midpoint: $(6, 2)$

Find the area of each.

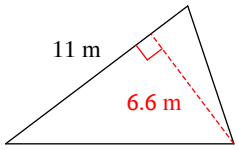
52)



53)

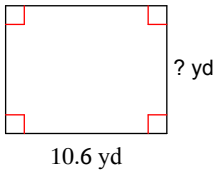


54)



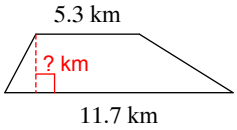
Find the missing measurement. Round your answer to the nearest tenth.

55)



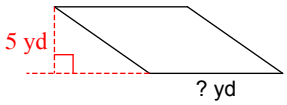
Area = 89 yd²

56)



Area = 25.5 km²

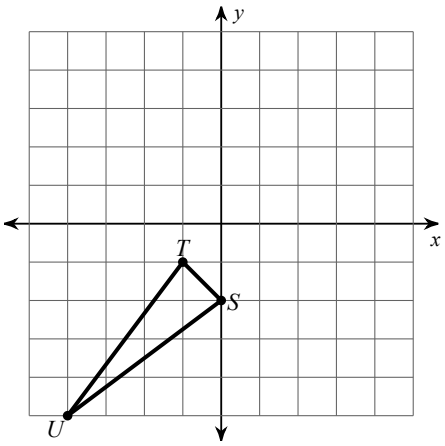
57)



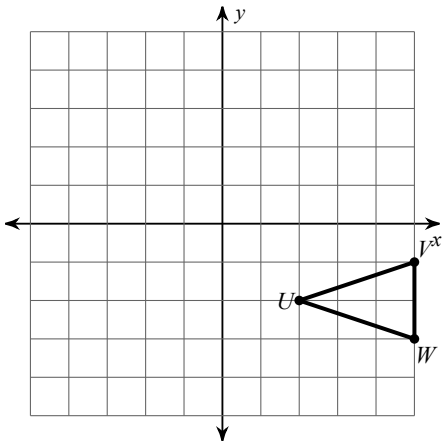
Area = 50 yd²

Graph the image of the figure using the transformation given.

58) translation: $(x, y) \rightarrow (x + 3, y + 2)$



59) reflection across $y = -1$



60) rotation 180° about the origin