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Honors Math II

Name Key

Unit 3 day 4 Slope and writing equations WS

Period_____ Date_____

Tell which line is steeper.

1. Line 1: through $(-2, 2)$, $(4, 3)$
   Line 2: through $(2, 3)$, $(6, 4)$

Line 2

2. Line 1: through $(5, 2)$, $(2, -5)$
   Line 2: through $(-3, -1)$, $(-2, 5)$

Line 2

Tell whether the lines are parallel, perpendicular, or neither.

3. Line 1: through $(-6, 2)$, $(3, 5)$
   Line 2: through $(4, 1)$, $(1, 0)$

parallel

4. Line 1: through $(7, 3)$, $(8, 7)$
   Line 2: through $(-5, -4)$, $(-1, -5)$

perpendicular

5. On Friday, you left for a weekend camping trip with 110 miles on the odometer and 14.5 gallons of gas in the tank of your car. When you returned on Sunday, the odometer read 299 miles and you still had 7.5 gallons of gas left. What was the fuel efficiency of your car on this trip?

$27 \frac{\text{miles}}{\text{gal}}$

6. When you started your shift at 7:00 A.M., 120 steel valves had already been machined and were ready for assembly. At 3:00 P.M., your shift ended and 424 steel valves were now completed and ready for assembly. The target production rate is 36 steel valves per hour. What was the production rate for your shift? Would your supervisor be satisfied with the work pace?

$38 \frac{\text{valves}}{\text{hr}}$ yes

Find the x and y intercepts of the line with the given equation. (write your answer in ordered pair form)

7. $y = 4x - 1$

x: $(1/4, 0)$

y: $(0, -1)$

8. $y = -x - 4$

x: $(-4, 0)$

y: $(0, -4)$

9. $y = -\frac{1}{2}x + 2$

x: $(4, 0)$

y: $(0, 2)$

10. $y = \frac{3}{2}x + 1$

x: $(-2/3, 0)$

y: $(0, 1)$

11. $-7x - 14y - 5 = 0$

X: $(-5/7, 0)$

y: $(0, -5/14)$

12. $4x - 2y = 1$

X: $(1/4, 0)$

y: $(0, -1/2)$

13. $6x + 4y = -5$

X: $(-5/6, 0)$

y: $(0, -5/4)$

14. $-3x + y = -8$

X: $(8/3, 0)$

y: $(0, -8)$

15. The caterer for your class picnic charges \$1 for each hot dog and \$2 for each hamburger. You have \$48 to spend. Write a model that shows the different numbers of hot dogs and hamburgers that you could purchase.

X: hot dog

y: hamburger

$x + 2y = 48$

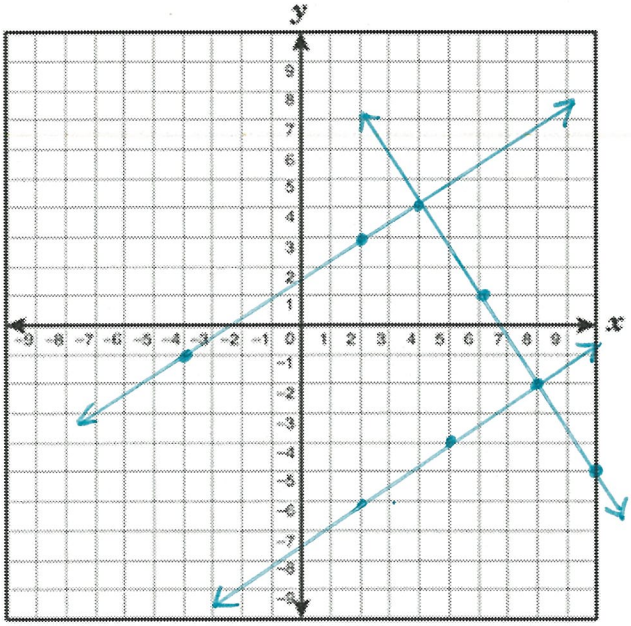
16. A car salesperson earns 2% on used car sales and 6% on new car sales. The salesperson wants to earn a \$7000 commission this month. Write a model that shows the different sales amounts of used and new cars that can be sold to reach the target commission.

x: used car

y: new car

$.02x + .06y = 7000$

17. Graph and write the equation of the line through the points $(-4, -1)$ and $(2, 3)$.
What is the domain, range and x and y intercepts of the line?



$m = 2/3$

$y = 2/3(x-2)+3$ or $y = 2/3(x+4)-1$

D: $\mathbb{R}$

R: $\mathbb{R}$

x: $(-2.5, 0)$

y: $(0, 5/3)$

Write the equation of the lines that are parallel and perpendicular to the above equation that goes through the point $(8, -2)$. Graph the 2 lines.

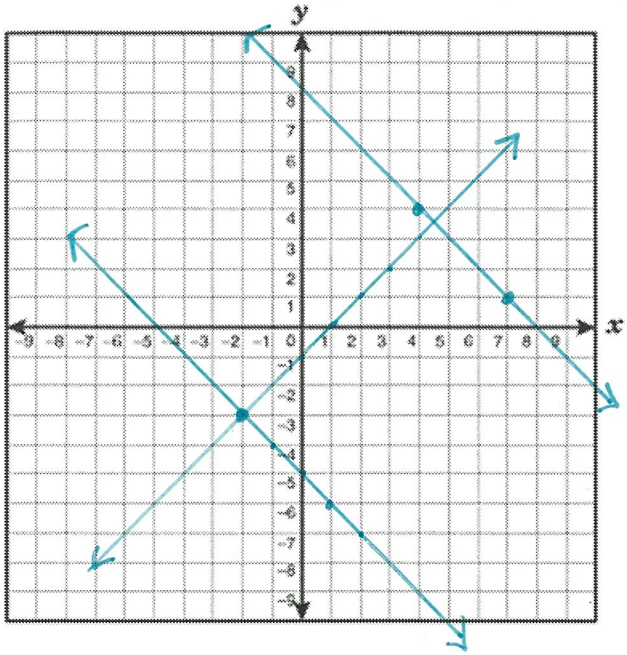
parallel

$y = 2/3(x-8)-2$

perpendicular

$y = -3/2(x-8)-2$

18. Graph and write the equation of the line through the points (4, 4) and (7,1).
What is the domain, range and x and y intercepts of the line?



$m = -1$

$y = -(x-4)+4$ or $y = -(x-7)+1$

D: $\mathbb{R}$

R: $\mathbb{R}$

x: (8,0)

y: (0,8)

Write the equation of the lines that are parallel and perpendicular to the above equation that goes through the point $(-2, -3)$. Graph the 2 lines.

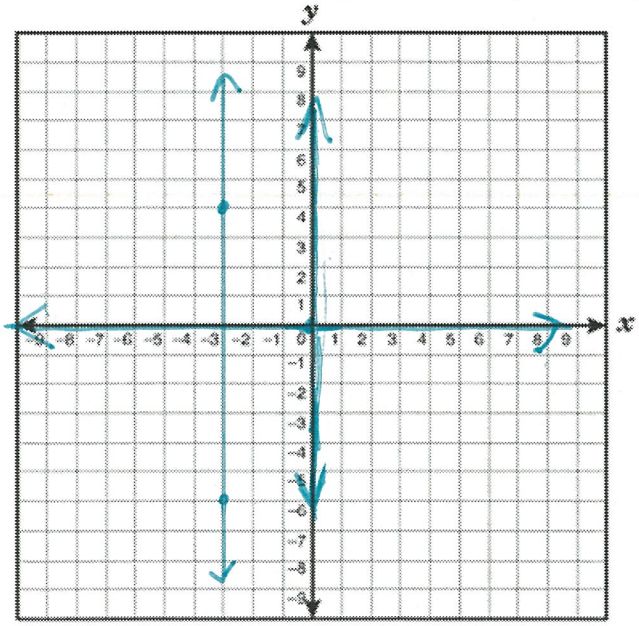
parallel

$y = -(x+2)-3$

perpendicular

$y = (x+2)-3$ or $y = x-1$

19. Graph and write the equation of the line through the points $(-3, 4)$ and $(-3, -6)$.
What is the domain, range and x and y intercepts of the line?



m = undefined

$x = -3$

D: $\{-3\}$ or $[-3]$

R: $\mathbb{R}$

x: (-3,0)

y: None

Write the equation of the lines that are parallel and perpendicular to the above equation that goes through the point (0, 0). Graph the 2 lines.

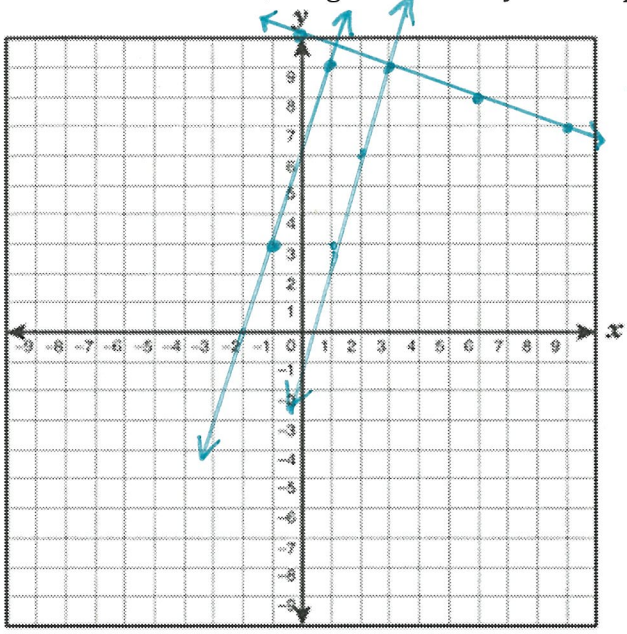
Parallel

$x = 0$

perpendicular

$y = 0$

20. Graph and write the equation of the line through the points $(-1, 3)$ and $(1, 9)$.
What is the domain, range and x and y intercepts of the line?



$m = 3$

$y = 3(x+1)+3$ or $y = 3(x-1)+9$

D: $\mathbb{R}$

R: $\mathbb{R}$

x: $(-2, 0)$

y: $(6, 0)$

Write the equation of the lines that are parallel and perpendicular to the above equation that goes through the point (3, 9). Graph the 2 lines.

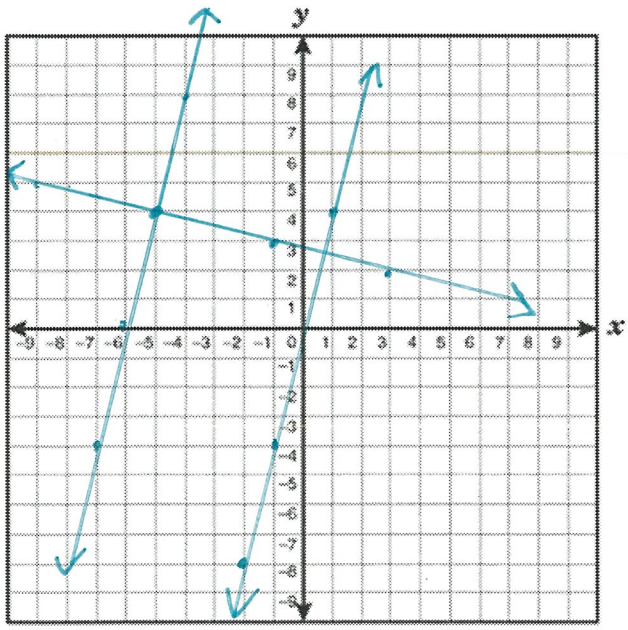
parallel

$y = 3(x-3)+9$

perpendicular

$y = -\frac{1}{3}(x-3)+9$

21. Graph and write the equation of the line through the points $(0, 0)$ and $(-2, -8)$.
What is the domain, range and x and y intercepts of the line?



$m = 4$

$y = 4(x-0)+0$ or $y = 4(x+2)-8$

$y = 4x$

D: $\mathbb{R}$

R: $\mathbb{R}$

X: $(0, 0)$

y: $(0, 0)$

Write the equation of the lines that are parallel and perpendicular to the above equation that goes through the point $(-5, 4)$. Graph the 2 lines.

parallel

$y = 4(x+5)+4$

perpendicular

$y = -\frac{1}{4}(x+5)+4$