3-3 Slopes of Lines Practice

Name Master Ed

Date _____ Block _____

1-6: Determine the slope of the line that contains the given points.

1. $J(0, 0), K(-2, 8)$ $\frac{8-0}{-2-0} = \frac{8}{-2} = \boxed{-4}$

2. $L(1, -2), N(-6, 3)$ $\frac{3-(-2)}{-6-1} = \boxed{\frac{5}{-7}}$

3. $T(1, -2), U(6, -2)$ $\frac{-2-(-2)}{6-1} = \frac{0}{5} = \boxed{0}$

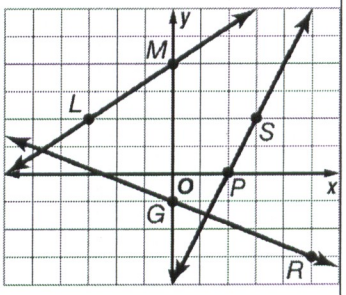
4. $R(-2, -3), S(3, -5)$ $\frac{-5-(-3)}{3-(-2)} = \boxed{\frac{-2}{5}}$

5. $P(-1, 2), Q(-9, 6)$ $\frac{6-2}{-9-(-1)} = \frac{4}{-8} = \boxed{\frac{-1}{2}}$

6. $V(-2, 10), W(-4, -3)$ $\frac{-3-10}{-4-(-2)} = \frac{-13}{-2} = \boxed{\frac{13}{2}}$

7-11: Use the graph to complete the table below.

	Find the slope of the given line.	Find the slope of a line perpendicular to that line.	Find the slope of the line parallel to that line.
7. $\overline{LM}$	$\frac{2}{3}$	$-\frac{3}{2}$	$\frac{2}{3}$
8. $\overline{PS}$	2	$-\frac{1}{2}$	2
9. $\overline{GR}$	$-\frac{2}{5}$	$\frac{5}{2}$	$-\frac{2}{5}$
10. The x-axis	0	Ø	0
11. The y-axis	Ø	0	Ø

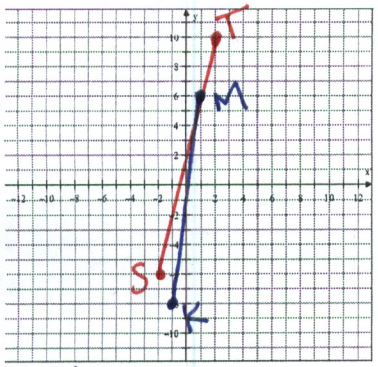


12-14: Determine if $\overleftrightarrow{KM}$ and $\overleftrightarrow{ST}$ are *parallel, perpendicular,* or *neither by comparing their slopes.* Graph each line to verify your answer.

12. $K(-1, -8), M(1, 6), S(-2, -6), T(2, 10)$

$m\overline{KM} = \frac{6-(-8)}{1-(-1)} = \frac{14}{2} = 7$

$m\overline{ST} = \frac{10-(-6)}{2-(-2)} = \frac{16}{4} = 4$

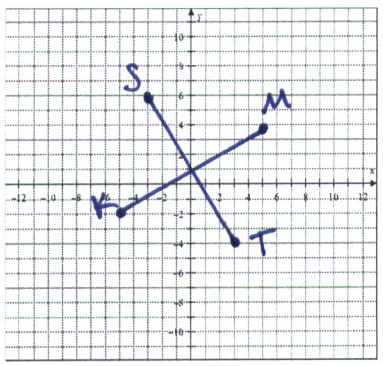


Neither ⊥ or ∥

13. $K(-5, -2), M(5, 4), S(-3, 6), T(3, -4)$

$m\overline{KM} = \frac{4-(-2)}{5-(-5)} = \frac{6}{10} = \frac{3}{5}$

$m\overline{ST} = \frac{-4-6}{3-(-3)} \quad \frac{-10}{6} = \frac{-5}{3}$

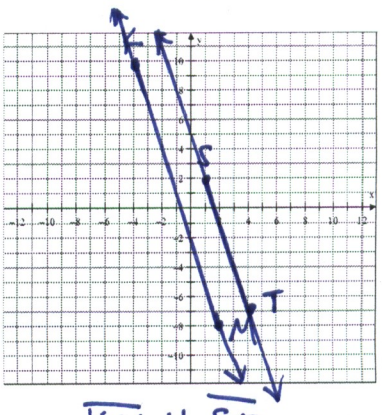


$\overline{KM} \perp \overline{ST}$

14. $K(-4, 10), M(2, -8), S(1, 2), T(4, -7)$

$m\overline{KM} = \frac{-8-10}{2-(-4)} = \frac{-18}{6} = \frac{-9}{3}$

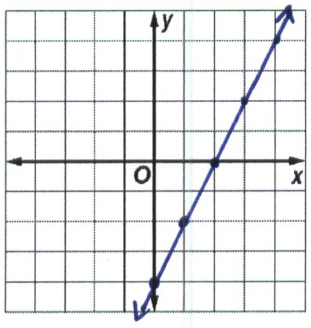
$m\overline{ST} = \frac{-7-2}{4-1} = \frac{-9}{3}$



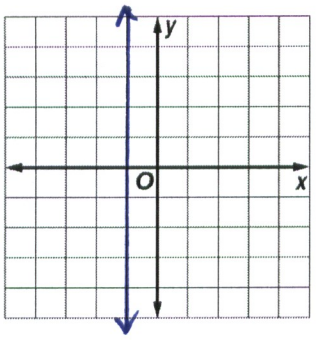
$\overline{KM} \parallel \overline{ST}$

15-20: Graph the line that satisfies each condition.

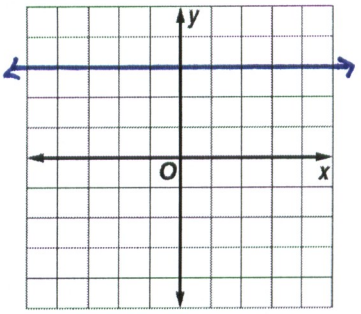
15. $y = 2x - 4$



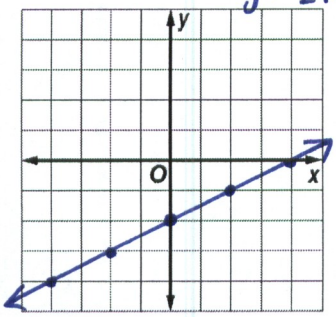
16. $x = -1$



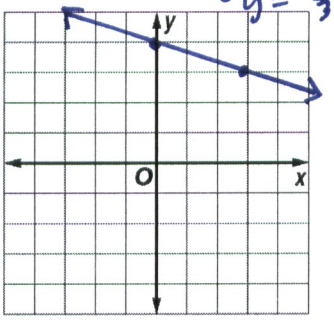
17. $y = 3$



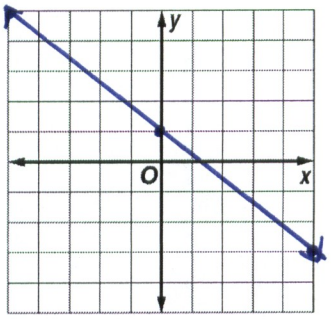
18. $2x - 4y = 8$ $-4y = -2x + 8$ $y = \frac{1}{2}x - 2$



19. $x + 3y = 12$ $3y = -x + 12$ $y = -\frac{1}{3}x + 4$

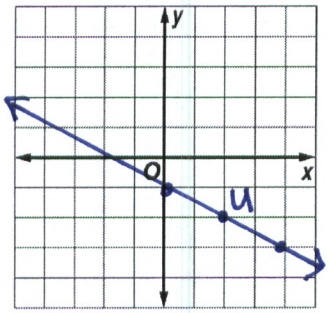


20. $y = -\frac{4}{5}x + 1$

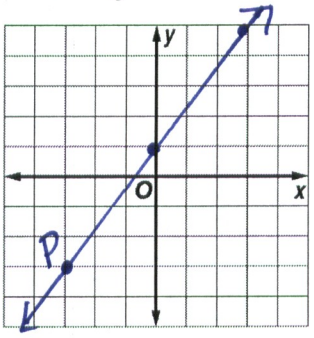


21-24: Graph the line that satisfies each condition.

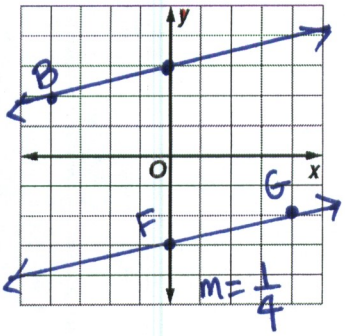
21. slope $= -\frac{1}{2}$, contains $U(2, -2)$



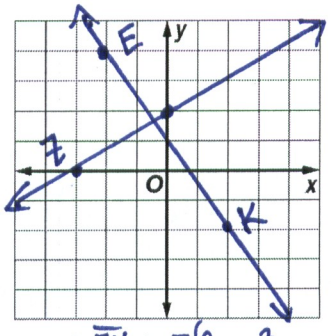
22. slope $= \frac{4}{3}$, contains $P(-3, -3)$



23. contains $B(-4, 2)$, parallel to $\overleftrightarrow{FG}$ with F(0, -3) & G(4, -2)



24. contains $Z(-3, 0)$, perpendicular to $\overleftrightarrow{EK}$ with $E(-2, 4)$ and $K(2, -2)$



$m\overleftrightarrow{EK} = \frac{-6}{4} = -\frac{3}{2}$

25: Complete the word problem.

25. PROFITS After Take Two began renting DVDs at their video store, business soared. Between 2005 and 2010, profits increased at an average rate of \$9000 per year. Total profits in 2010 were \$45,000. If profits continue to increase at the same rate, what will the total profit be in 2014?

2005 — 2010
↑ in 9000/yr.
↑ 5 years = \$45,000

2010 45,000
11 +9,000
12 +9,000
13 +9,000
14 +9,000

\$81,000