

Algebra 2
2-4 More About Linear Equations

Name _____


Date _____ **A#7**

Goal: To write an equation of a line given its slope and a point on the line.




Review

	Slope-intercept form	Standard Form
Form		
Characteristics		

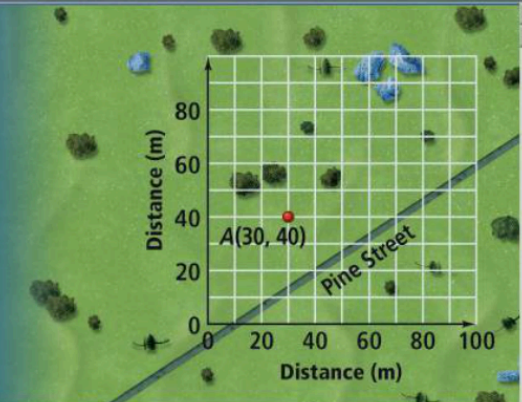


SOLVE IT!

Getting Ready!



A contractor needs to build two straight roads, each passing through point A. One road must be parallel to Pine Street and the other road must be perpendicular to Pine Street. Find the coordinates of a second point the parallel road will pass through and the coordinates of a third point the perpendicular road will pass through.



	Point-Slope Form	Parallel Lines	Perpendicular
Form			
Characteristics			

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Note: "the equation" general means _____ form

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Example 1: Write the equation of the line passing through $(-5, 2)$ with a slope $\frac{3}{5}$.

Practice:

Write an equation of the line that passes through the given point and has the given slope.

7. $(2, 1), m = -2$

8. $(-4, 3), m = 5$

9. $(7, -5), m = 1$

Example 2: Write the equation of the line that passes through $(3, 2)$ and $(5, 8)$.

Practice

Write an equation of the line that passes through the given points.

13. $(-2, 1), (2, 4)$

14. $(-1, 3), (1, -1)$

15. $(-3, -1), (3, 2)$

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Example 3: What is the equation of the line $y = \frac{3}{4}x - 5$ in standard form?

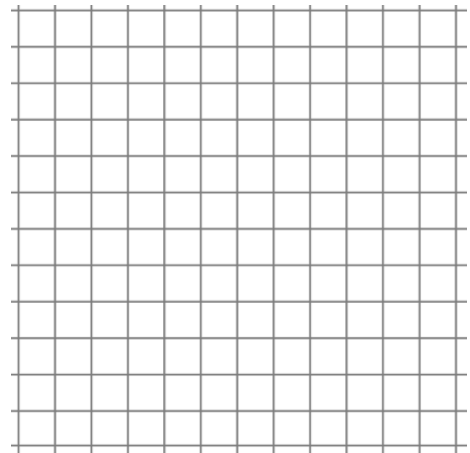


Practice

16. $y = \frac{3}{5}x - 4$

17. $y = -\frac{4}{3}x + \frac{5}{6}$

Example 4: Graph $3x + 5y = 15$ using the intercepts.

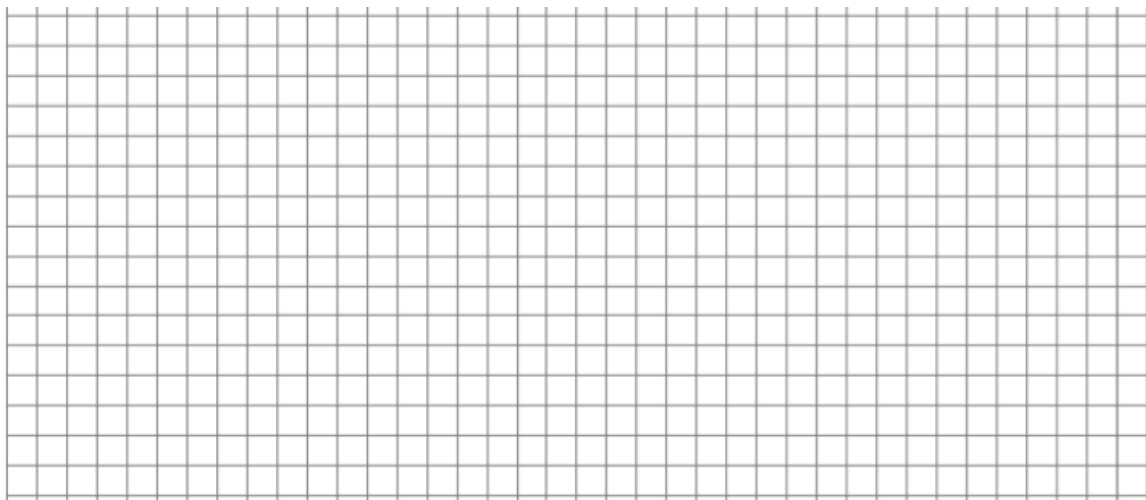


Practice

18. $4x + 5y = 20$

19. $-2x + y = 6$

20. $6x - 8y = 24$



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Example 5: What is the equation of the line that is parallel to $y = 6x - 2$ and passes through $(1, -3)$? What is the equation of the line that is perpendicular to $y = 6x - 2$ and passes through $(1, -3)$?

Write an equation in slope-intercept form for each line.

17. the line parallel to $y = 4x - 1$ through $(2, 8)$. Explain why the parallel lines cannot pass through $(2, 7)$.

18. the line perpendicular to $y = -\frac{1}{3}x + 5$ through $(6, 3)$