

Name: _____

Sec. 4.5: Graph Using Slope-Intercept Form

Slope-Intercept Form: an equation of a line in the form $y = mx + b$, where m is the _____ and b is the _____.

Example: The line $y = \frac{2}{3}x - 5$ has a slope of $\frac{2}{3}$ and a y-intercept of -5 .

Graphing a line using slope-intercept form:

- Plot _____.
- Use the _____ to plot a second point, starting from the _____.
- Draw a line _____ the _____ points.

Parallel lines: two lines in the same plane that never intersect

- Parallel lines that are _____ will have the _____.
- Vertical lines in the same _____ are _____ to each other.

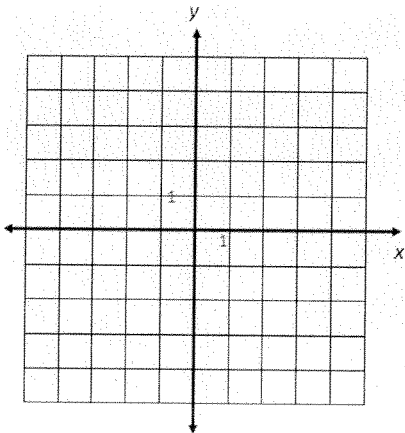
Examples

Identify the slope and the y-intercept of the line with the given equation.

1. $y = 3x + 5$

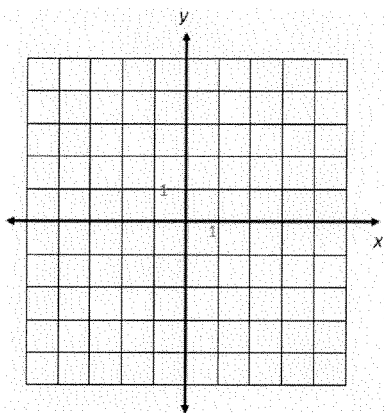
2. $4x + 2y = 10$

3. Graph the equation $y = 2x - 4$.

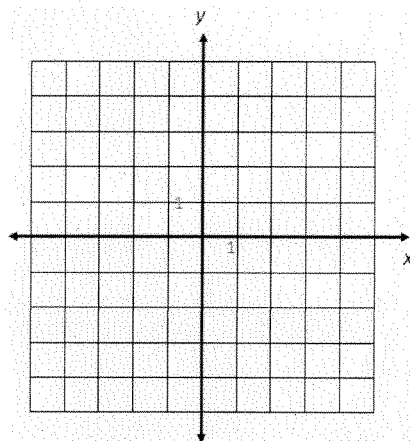


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4. Graph the equation $y = -\frac{2}{3}x + 1$.

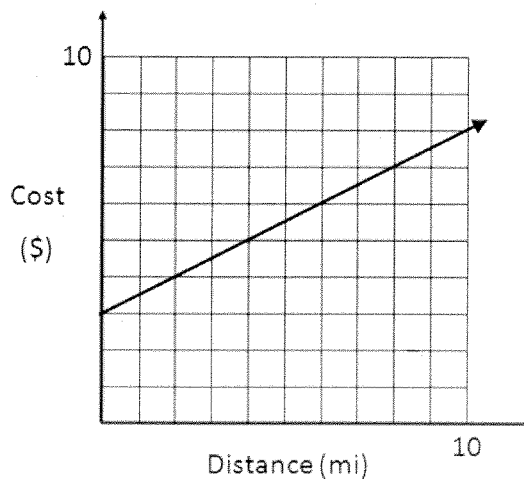


5. Graph the equation $-4x + 4y = -8$.



6. Determine if the line $4x + 3y = 15$ is parallel to the line $y = -\frac{3}{4}x - 9$.

7. The graph below shows the cost for hiring a taxi, based on the number of miles driven. Find the slope and the y-intercept of the equation, and explain what they represent.



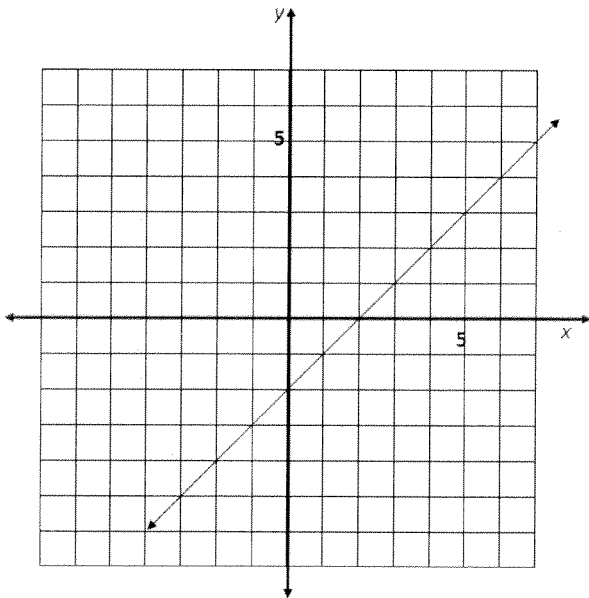
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Sec. 4.5 Practice Problems

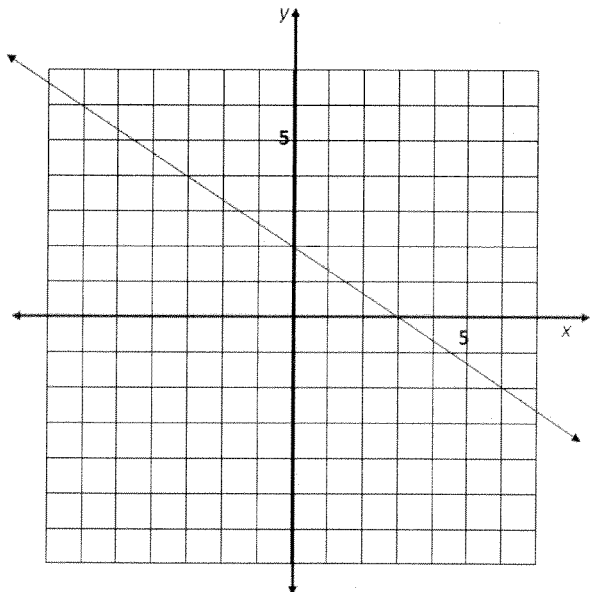
Identify the slope and y-intercept of the line with the given equation.		
1. $y = 3x + 4$ slope: y-int:	2. $y = -\frac{2}{5}x + 7$ slope: y-int:	3. $y = 4x - 6$ slope: y-int:
4. $y = -2x$ slope: y-int:	5. $y = 5$ slope: y-int:	6. $x = -2$ slope: y-int:
7. $3x + y = 4$ slope: y-int:	8. $2x + 6y = 30$ slope: y-int:	9. $4x - 3y + 6 = 0$ slope: y-int:

Determine the slope and y-intercept of the equation shown in the graph.

10. slope: y-int:



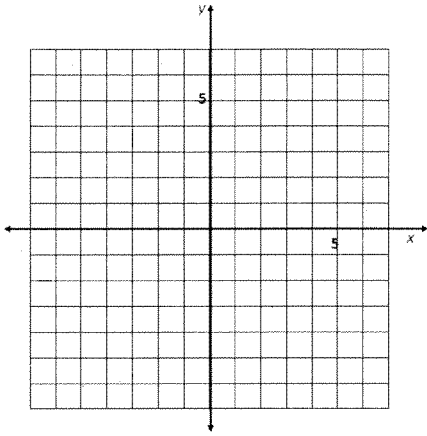
11. slope: y-int:



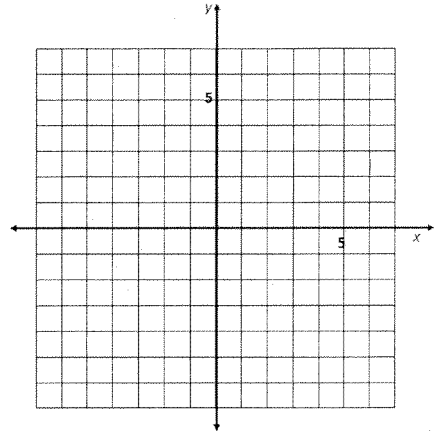
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Graph the equation.

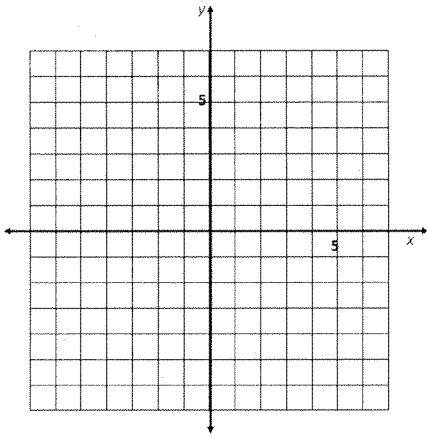
12. $y = -2x + 3$



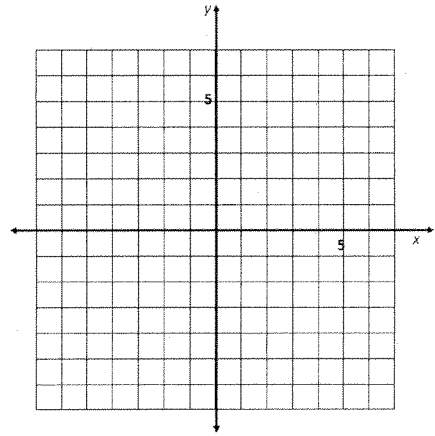
13. $y = 3x + 1$



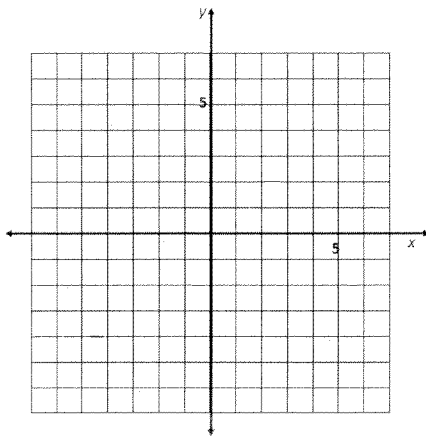
14. $y = \frac{3}{4}x - 2$



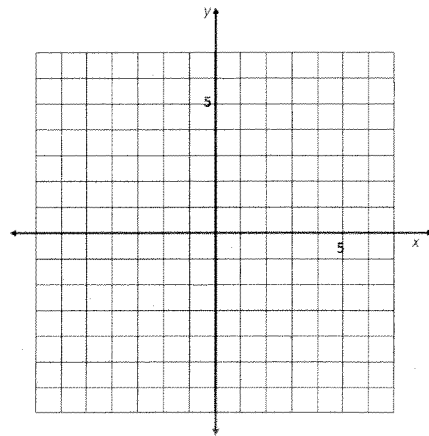
15. $y = -\frac{2}{5}x - 4$



16. $4x + 2y = 6$



17. $4x - 3y = 15$



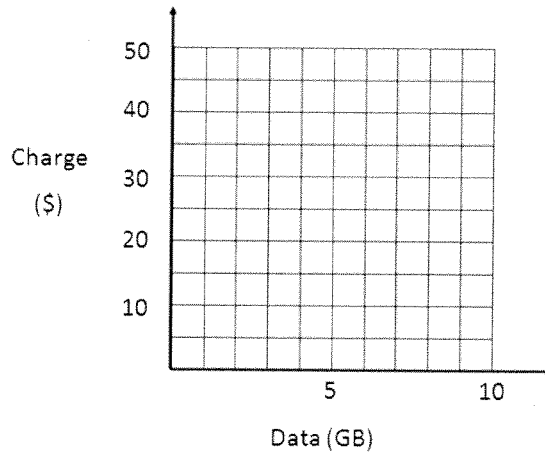
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Tell whether the graphs of the two lines are parallel. Explain your reasoning.

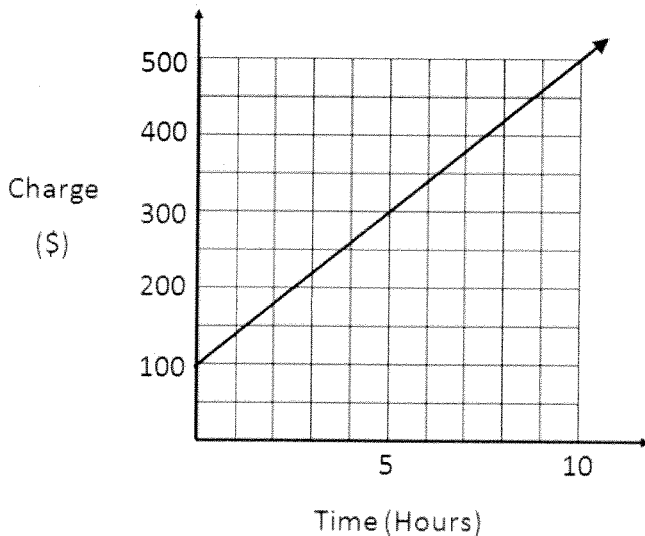
18. $y = 3x - 5$, $3x + y = 8$

19. $y = -2x + 8$, $10x + 5y = -15$

20. An Internet Service Provider (ISP) has come up with a new monthly payment plan for Internet service: a flat fee of \$10 plus a data fee of \$3 per Gigabyte of data downloaded during that month. Draw a graph that illustrates this payment plan.



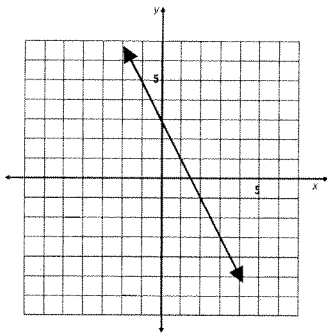
21. The graph below shows the rates that an electrician charges to make a house call, based on the number of hours worked at the house. Determine the slope and y-intercept, and explain what they represent.



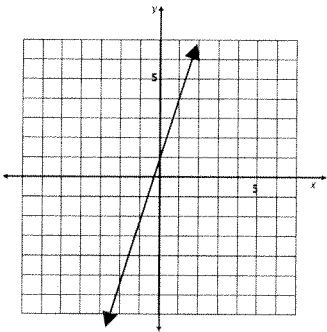
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ANSWERS to Sec. 4.5 Practice Problems

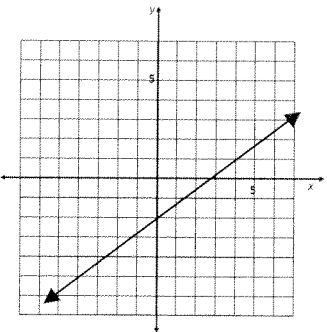
1. slope: 3 y-int: 4
2. slope: $-\frac{2}{5}$ y-int: 7
3. slope: 4 y-int: -6
4. slope: -2 y-int: 0
5. slope: 0 y-int: 5
6. slope: undefined y-int: none
7. slope: -3 y-int: 4
8. slope: $-\frac{1}{3}$ y-int: 5
9. slope: $\frac{4}{3}$ y-int: 2
10. slope: 1 y-int: -2
11. slope: $-\frac{2}{3}$ y-int: 2



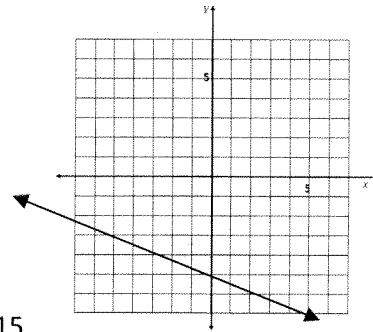
12.



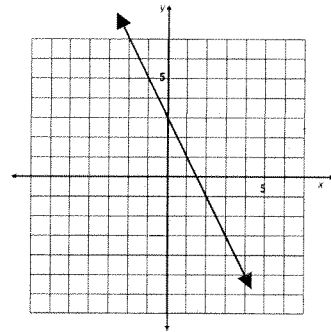
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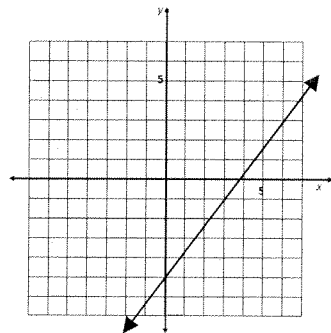
14.



15.



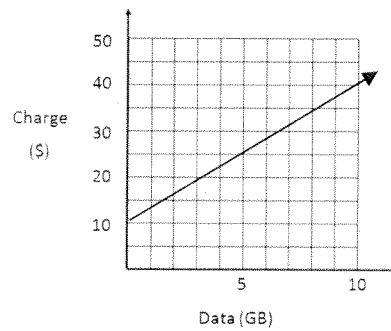
16.



17.

18. No; they have different slopes.

19. Yes; they have the same slope.



20.

21. slope: 40; The hourly rate is \$40.
y-int: 100: There is a \$100 charge just to show up at the house.