Geometry Pre AP

Graphing Linear Equations

Name_____

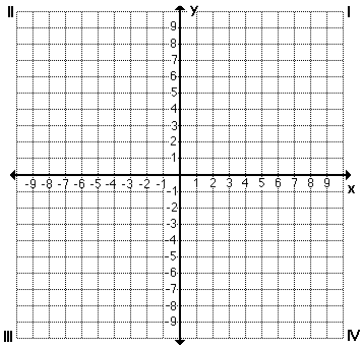
Date_____ Period_____

Find the x- and y-intercepts and slope of each equation.

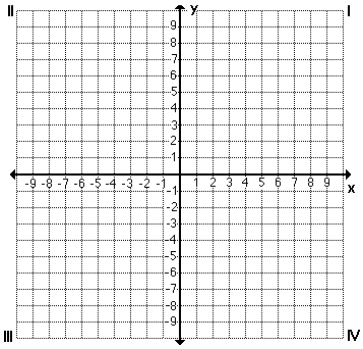
1. $y = -x$	2. $x + 3y = 6$	3. $x = 2$
4. $y = 0$	5. $y = 2x - 9$	6. $18x - 42y = 210$

Graph each equation then write the equation in standard form when indicated.

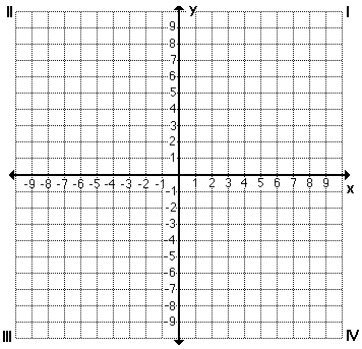
7. $3x + 5y = 30$



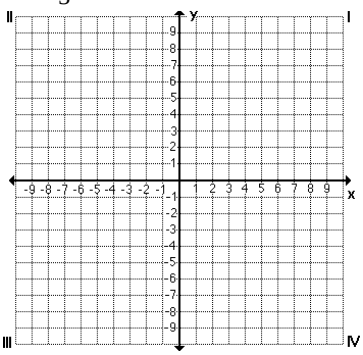
8. $x + y = 8$



9. $21x - 7y = 14$

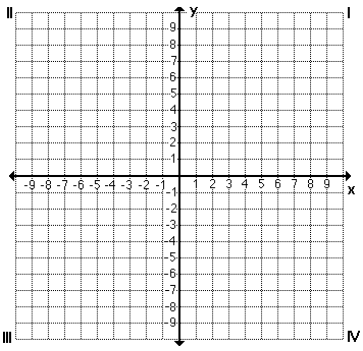


10. $y = \frac{2}{3}x + 6$



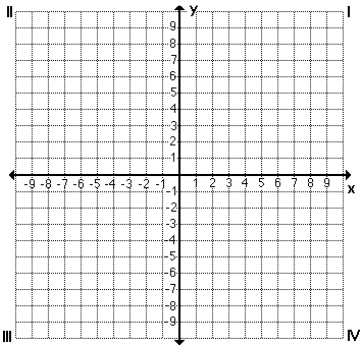
Standard Form _____

11. $y + 2 = -\frac{6}{5}(x - 1)$



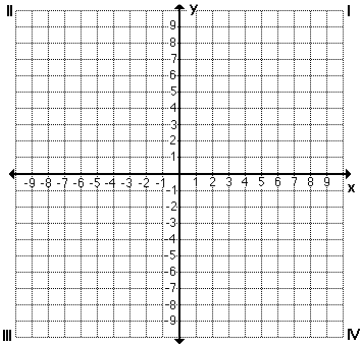
Standard Form _____

12. $y = -4x + 3$



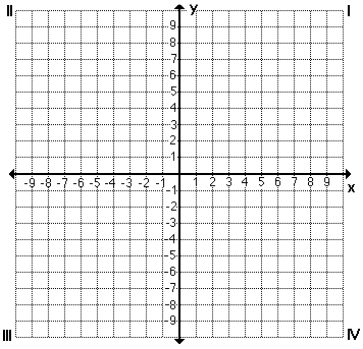
Standard Form _____

13. $y - 3 = \frac{3}{4}(x + 5)$

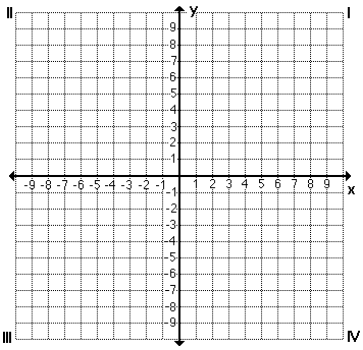


Standard Form _____

14. $10x + 25y = 100$



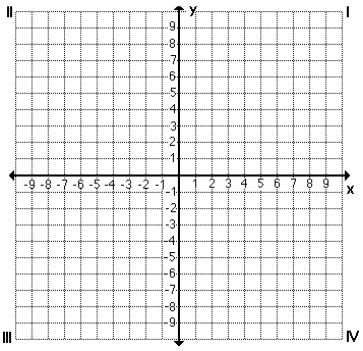
15. $y = -2(x + 8)$



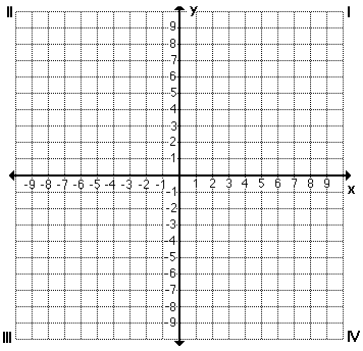
Standard Form _____

Use the description to graph each line.

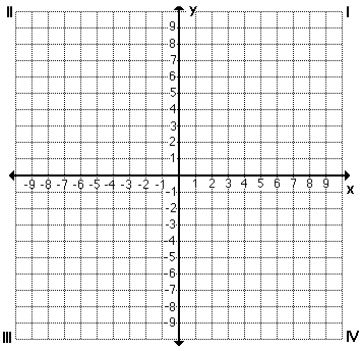
16. m = 0; b = 2



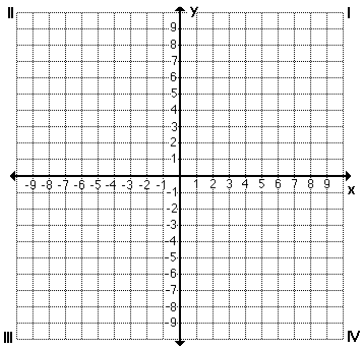
17. line perpendicular to the line y = 2x – 5; passes through C(0, -4)



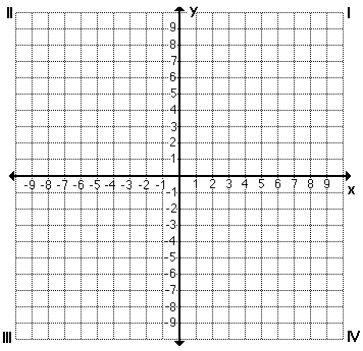
18. line parallel to the y-axis and through D(-8, 15)



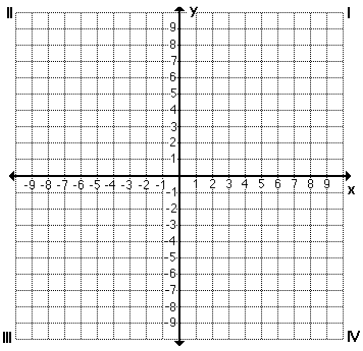
19. line perpendicular to the y-axis and through E(-8, 5)



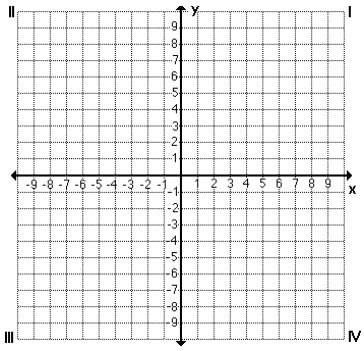
20. m = $\frac{3}{5}$; passes through F(0, 2)



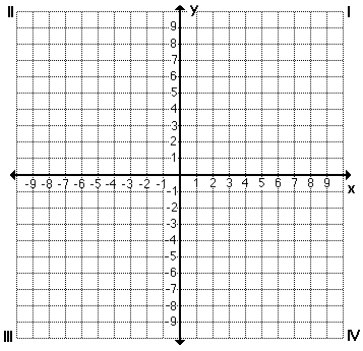
21. Graph several lines having a slope of -4. Describe how the equations of these lines are alike and how they are different.



22. The line parallel to 3x + y = 0 through the point (1, -3)



23. Graph several lines passing through the point G(0, -1). Describe how the equations of these lines are alike and how they are different.

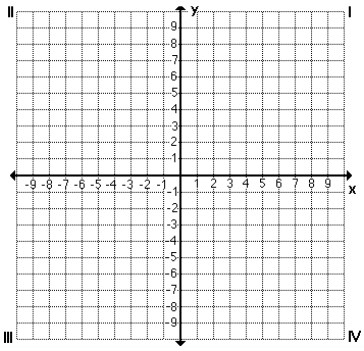


24. Graph these three lines on the same graph grid.

3x – y = 10 3y + x = 6

y = 3x – 2

Describe the relationship among the graphs.



25. What is the slope of any line that is parallel to the y-axis? Explain why this is true.

26. The equation of a line is $y = -2x+6$. Suppose you added 3 to the x value and 2 to the y value of every ordered pair of point on the line.

a. How would the graph of the line change?

b. How would the equation of the line change?

Write an equation for the line fitting each description.

27. $m = -1/6$, through the point (12, -3)

point slope form _____

standard form _____

slope-intercept form _____

28. $m = -6$ with x-intercept 12

point slope form _____

standard form _____

slope-intercept form _____

29. through the points (3, -4) and (4, 8)

point slope form _____

standard form _____

slope-intercept form _____

Geometry
Writing Equations

Name_____
Date_____Period_____

I. State whether the given line passes through the given point.

1. $x + y = 7$ (4, 3)	2. $x - y = 5$ (9, 4)	3. $x + 2y = 7$ (1, 3)	4. $3x - 2y = 8$ (2, -1)

II. A point is to lie on the given line. Find the missing coordinate.

5. $2x - y = 8$ (x, -2)	6. $3x + 2y = 24$ (x, 3)	7. $x + 2y = 9$ (3, y)	8. $2x + 3y = 5$ (-2, y)

III. Write the equation of the line that contains the given two points.

9. (-2, 2), (0, 8)	10. (2, -6), (-5, $-\frac{1}{2}$)	11. (9, -11), (9, 13)

IV. Answer the following.

12. A line contains (4, 3) and (x, 7). It has a slope of 2. Find x.	13. A line with slope 6 contains (-4, y) and (2, 4y). Find y.	14. A line contains (-5, 2) and (x, 6). It has a slope of $-\frac{2}{7}$. Find x.
15. Write the equation of the y-axis in standard form.	16. Write the equation of the line parallel to the x-axis and 10 units below it in standard form.	17. Write the equation of the line with an undefined slope and passes through the point (-7, 9) in standard form.
18. Write the equation of the line with a slope of 0 and passes through the point (-11, -6) in standard form.	19. Write the equation of the line parallel to the x-axis and intersecting the y-axis at (0, 3) in standard form.	20. Find the value *m* in y= *m*x + 3 so that the point (3, 4) will be on the line.
21. Write the equation for the line containing (2, -3) and parallel to the line $3x - y + 4 = 0$ in point slope form.	22. Write the equation for the line that contains the point (5, -1) and has the same y-intercept as $x - 3y = 6$ in point slope form.	23. Write the equation of the line that is perpendicular to $2x - 3y = 6$ and has the same x-intercept as $3x + 4y = 12$ in point slope form.

IV. Write the linear equations in standard form. State the x and y-intercepts.

24. $3y - 12 = 9x$	25. $x = y$
26. $y + 9 = \frac{3}{7}(x - 5)$	27. $3(x + 4) = y - 8x + 3$

Extension: The graphs of $5x + 2y = 12$ and $5x + 2y = 2$ are parallel lines. Find the equation of the line that is parallel to both lines and lies midway between them. Explain why your answer is correct.

Geometry Pre AP
More Writing Equations

Name_____
Date_____Period_____

Find the equation of the line.

1. 6 units below and parallel to the x-axis	2. perpendicular to the x-axis and passing through (8, 1)
3. y-intercept of 2 and slope of 4	4. slope of 5 and passes through (0, -2)
5. parallel to $y = 10x - 6$ and y-intercept of 1.	6. Perpendicular to $2y = x + 16$ and passes through (0, -5)
7. y-intercept of 2 and perpendicular to the line containing (-4, 6) and (1, 11)	8. containing (2, 1) and (3, 4)
9. containing (-6, 3) and (2, -1)	10. containing (1, 5) and (-3, 5)
11. having x-intercept of 2 and slope of 7	12. having x-intercept of 3 and passing through (1, 8)
13. passing through (-3, 6) and (-3, 10)	14. passing through (8, 7) and perpendicular to $3y = -2x + 24$

15. $\overleftrightarrow{CD}$ is perpendicular to $2x + 3y = 8$. If C has coordinates (1, 4), find the equation of $\overleftrightarrow{CD}$.	16. If P = (-2 5) and R = (0, 9), find the equation of the perpendicular bisector of $\overline{PR}$.

Given A(2, 1), B(16, 3), and C(4, 12):

17. Find the equation of a line through C parallel to $\overline{AB}$.	18. Find the equation of the perpendicular bisector of $\overline{AB}$.	19. Find the slope of the line joining the midpoints of $\overline{AC}$ and $\overline{BC}$.