HOMEWORK

Homework Problems

Circle the homework problems assigned to you by the computer, then complete them below.

Explain

Graphing Lines I

1. Circle the points below that lie on the line described by the equation $x + y = 5$.
   (1, 4)
   (–3, 5)
   (9, 6)
   (–2, 7)
   (–8, 4)

2. Graph the equation $x + y = 3$.

3. Graph the equation $2x + y = 6$.

4. Circle the points below that lie on the line described by the equation $x - 2y = 8$.
   (3, 2)
   (–4, 6)
   (–7, 4)
   (0, –4)
   (2, –3)

5. Graph the equation $x + 3y = 6$.

6. Graph the equation $4x + y = 12$.

7. Graph the equation $5x - 4y = 10$.

8. Graph the equation $2x - 3y = 6$.

9. Jay has decided to devote a total of 10 hours a week to his music, either playing his guitar or writing songs. If $x =$ the number of hours he spends playing the guitar, and $y =$ the number of hours he spends writing songs, then the equation $x + y = 10$ describes how he can split his time. Graph this equation.

10. Barbara is going to donate a total of $50 to two charities. If $x =$ the amount she will donate to the American Heart Association and $y =$ the amount she will donate to the American Cancer Society, then the equation $x + y = 50$ describes how she can divide her money. Graph this equation.

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

12. Graph the equation $x - \frac{3}{5}y = -2$

Graphing Lines II

13. Complete the table below to find six ordered pairs that satisfy the equation $y = 5$.

x	y
5	
3	
0	
2	
–2	
–4	

14. Graph the equation $y = 5$.

15. Find the x- and y-intercepts of the line $x + 4y = 4$.

16. Graph the equation $x = -4$.

17. Graph the equation $y = 1$.

18. Find the x- and y-intercepts of the line $4x - 3y = 12$.

19. Graph the equation $y = -6$.

20. Graph the equation $x = 3$.

21. To change a temperature from degrees Fahrenheit to degrees Celsius, use the formula $C = \frac{5}{9}(F - 32)$. Graph this equation.

22. To change a temperature from degrees Fahrenheit to degrees Celsius, use the formula $C = \frac{5}{9}(F - 32)$. Find the F- and C-intercepts of the line described by this equation.

23. Graph the equation $x = 3.5$.

24. Find the x- and y-intercepts of the line $x - \frac{3}{4}y = 2$.

Slope of a Line

25. Find the slope of the line through the points (2, 4) and (5, 7).

26. Find the slope of the line through the points (1, 3) and (5, 3).

27. The point (1, –4) lies on a line with slope $\frac{2}{3}$. Graph this line by finding another point that lies on the line.

28. Find the slope of a line parallel to the line through the points (–1, 2) and (2, 8).

29. Find the slope of the line through the points (–4, –3) and (–4, 5).

30. The point (1, 3) lies on a line with slope 1. Graph this line by finding another point that lies on the line.

31. Find the slope of a line perpendicular to the line through the points (2, –4) and (6, 1).

32. The point (–5, 2) lies on a line that has slope $-\frac{3}{7}$. Graph this line by finding another point that lies on the line.

33. The number of eggs used by a bakery can be expressed by the equation $y = 12x$, where x is the number of cartons purchased and y is the number of eggs used. Use the point (0, 0) and the slope of the line, 12, to find another point on the line.

34. The linear equation $P = 4s$ describes the relationship between the perimeter, P, of a square and the length of each of its sides, s. If the length of the sides of a square is 0, its perimeter is 0. Use the point (0, 0) and the slope of the line, 4, to find three other points that satisfy the equation $P = 4s$.

35. Each line listed in the left column below is parallel to a line listed in the right column. Match pairs of parallel lines.

The line through (2, 5) and (–1, –2).	The line through (3, 2) and (5, 6).
A line with slope 2.	The line through (4, 5) and (1, –2).
The line through (9, –1) and (3, –4).	A line with slope $-\frac{3}{4}$.
The line through (1, 2) and (5, –1).	The line through (–1, 1) and (11, 7).

36. Each line listed in the left column below is perpendicular to a line listed in the right column. Match pairs of perpendicular lines.

The line through (12, 4) and (3, 7).	A line with slope 3.
The line through (2, 6) and (0, 8).	The line through (3, –1) and (–2, –3).
The line through (5, 6) and (7, 1).	The line through (–3, 4) and (4, 8).
The line through (–4, 10) and (0, 3).	The line through (–2, 2) and (1, 5).

APPLY

Practice Problems

Here are some additional practice problems for you to try.

Graphing Lines I

1. Circle the points below that lie on the line whose equation is $2x - y = 5$.

   (2, 1)
   (3, 1)
   (0, –5)
   (–5, 0)
   (1, –3)

2. Circle the points below that lie on the line whose equation is $x + 3y = 6$.

   (3, 3)
   (0, 2)
   (5, 1)
   (–3, 3)
   (3, 1)

3. Circle the points below that lie on the line whose equation is $x + 2y = 6$.

   (–2, 3)
   (1, 3)
   (0, 3)
   (6, 0)
   (–2, 4)

4. Circle the points below that lie on the line whose equation is $3x - 2y = 12$.

   (2, –3)
   (–2, 3)
   (–2, 9)
   (4, 0)
   (0, 4)

5. Circle the points below that lie on the line whose equation is $4x - y = 3$.

   (1, 1)
   (0, –3)
   (–1, 1)
   (2, 5)
   (3, 15)

6. Circle the points below that lie on the line whose equation is $\frac{1}{2}x - \frac{2}{3}y = 6$.

   (2, 3)
   (4, –6)
   (0, 9)
   (12, 0)
   (–8, –15)

7. Circle the points below that lie on the line whose equation is $\frac{1}{3}x + \frac{3}{4}y = 4$.

   (6, 4)
   (–6, 8)
   (0, 4)
   (12, 0)
   (21, –4)

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

9. Graph the equation $x + y = –5$.

10. Graph the equation $x + y = –2$.

11. Graph the equation $x - y = –1$.

12. Graph the equation $x - y = 2$.

13. Graph the equation $x - y = 3$.

14. Graph the equation $x + 3y = 6$.

15. Graph the equation $3x - y = -3$.

16. Graph the equation $2x + y = -2$.

17. Graph the equation $2x + 3y = -6$.

18. Graph the equation $3x + 5y = 15$.

19. Graph the equation $4x - 3y = 12$.

20. Graph the equation $3x + 2y = -5$.

21. Graph the equation $x - 2y = 2$.

22. Graph the equation $2x - 5y = -1$.

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

24. Graph the equation $\frac{3}{4}x + \frac{2}{5}y = 1$.

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

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

27. Graph the equation $\frac{1}{2}x + \frac{2}{5}y = -1$.

28. Graph the equation $\frac{1}{4}x + \frac{1}{5}y = 1$.

Graphing Lines II

29. Graph the equation $y = 5$.

30. Graph the equation $y = -6$.

31. Graph the equation $y = -3$.

32. Graph the equation $y = 1$.

33. Graph the equation $y = -3$.

34. Graph the equation $y = 4$.

35. Graph the equation $x = 5$.

36. Graph the equation $x = -4.5$.

37. Graph the equation $x = 2.5$.

38. Graph the equation $y = 0$.

39. Graph the equation $x = 0$.

40. Graph the equation $x = 6$.

41. Graph the equation $x = -5$.

42. Graph the equation $x = -1.5$.

43. Find the *x*- and *y*-intercepts of the line $x - y = 6$.

44. Find the *x*- and *y*-intercepts of the line $x + y = 5$.

45. Find the *x*- and *y*-intercepts of the line $3x + y = 9$.

46. Find the *x*- and *y*-intercepts of the line $x + 2y = 8$.

47. Find the *x*- and *y*-intercepts of the line $2x + y = 6$.

48. Find the *x*- and *y*-intercepts of the line $3x + 5y = 15$.

49. Find the *x*- and *y*-intercepts of the line $4x - 3y = 24$.

50. Find the *x*- and *y*-intercepts of the line $2x - 9y = 18$.

51. Find the *x*- and *y*-intercepts of the line $3x + 4y = 9$.

52. Find the *x*- and *y*-intercepts of the line $5x + 2y = 8$.

53. Find the *x*- and *y*-intercepts of the line $2x - 3y = 10$.

54. Find the *x*- and *y*-intercepts of the line $\frac{2}{5}x + y = 6$.

55. Find the *x*- and *y*-intercepts of the line $x + \frac{3}{4}y = 9$.

56. Find the *x*- and *y*-intercepts of the line $x - \frac{2}{3}y = 18$.

Slope of a Line

57. Find the slope of the line through the points (1, 4) and (–3, –2).

58. Find the slope of the line through the points (5, 3) and (–10, –3).

59. Find the slope of the line through the points (2, 3) and (–4, –1).

60. Find the slope of the line through the points (–3, 6) and (2, 5).

61. Find the slope of the line through the points (–2, 7) and (4, –5).

62. Find the slope of the line through the points (–5, 1) and (3, –7).

63. Find the slope of the line through the points (7, 5) and (3, 1).

64. Find the slope of the line through the points (9, 5) and (4, 3).

65. Find the slope of the line through the points (8, 6) and (1, 2).

66. Find the slope of the line through the points (0, –5) and (3, 0).

67. Find the slope of the line through the points (0, 7) and (4, 0).

68. Find the slope of the line through the points (0, 3) and (–7, 0).

69. What is the slope of a horizontal line?

70. What is the slope of a vertical line?

71. Find the slope of a line parallel to the line that passes through the points (12, 2) and (8, –3).

72. Find the slope of a line parallel to the line that passes through the points (8, 7) and (4, –3).

73. Find the slope of a line parallel to the line that passes through the points (15, 3) and (10, –2).

74. Find the slope of a line parallel to the line that passes through the points (6, 2) and (9, –1).

75. Find the slope of a line parallel to the line that passes through the points (5, –1) and (–4, 7).

76. Find the slope of a line parallel to the line that passes through the points (7, –2) and (–1, 4).

77. Find the slope of a line perpendicular to the line that passes through the points (–1, –3) and (4, 7).

78. Find the slope of a line perpendicular to the line that passes through the points (5, –2) and (–3, 8)

79. Find the slope of a line perpendicular to the line that passes through the points (–2, –3) and (4, 12).

80. Find the slope of a line perpendicular to the line that passes through the points (–4, 5) and (2, –7).

81. Find the slope of a line perpendicular to the line that passes through the points (9, 3) and (–1, –2).

82. Find the slope of a line perpendicular to the line that passes through the points (–3, 5) and (–6, 4).

83. The point (5, 1) lies on a line with slope $\frac{2}{5}$. Graph this line by finding another point that lies on the line.

84. The point (3, 2) lies on a line with slope $-\frac{1}{3}$. Graph this line by finding another point that lies on the line.

EVALUATE

Practice Test

Take this practice test to be sure that you are prepared for the final quiz in Evaluate.

1. The table below contains three points whose coordinates satisfy the equation $2x - 3y = 12$. Plot these ordered pairs then graph the line through them.

x	y
6	0
0	–4
3	–2

2. Circle the ordered pairs in the table below whose coordinates **do not** satisfy the equation $x + y = 7$.

x	y
6	1
2.7	4.3
–5	–2
3	–4
12	–5
4	11
–2	9

3. Graph the equation $x + 2y = 6$.

4. Complete the table below so that the coordinates of the ordered pairs in the table satisfy the equation $\frac{2}{5}x + \frac{4}{5}y = 8$.

x	y
30	___
___	5
0	___
–10	___
___	0

5. Complete the table below to find three ordered pairs whose coordinates satisfy the equation $x = -3$. Then graph the line.

x	y
___	0
___	5
___	–4

6. Circle the statement(s) below that are true about the equation $y = -7$.

   Its graph is a horizontal line.
   Its graph is a vertical line.
   Its graph is a line that passes through the origin.
   Its graph is none of the above.

7. Find the x- and y-intercepts of the line $4x - y = 7$.

8. Find the x- and y-intercepts of the line $5x - 3y = 15$.

9. Find the slope of the line that passes through the points (7, –2) and (4, 5).

10. The line $y = \frac{5}{4}x$ is shown in Figure 4.1.5. What is the slope of this line?

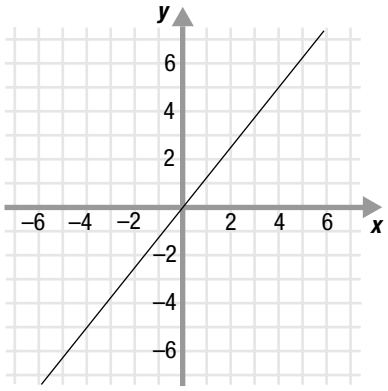

Figure 4.1.5

11. The line through the points (–2, 3) and (8, 1) is shown in Figure 4.1.6. What is the slope of a line that is perpendicular to this line?

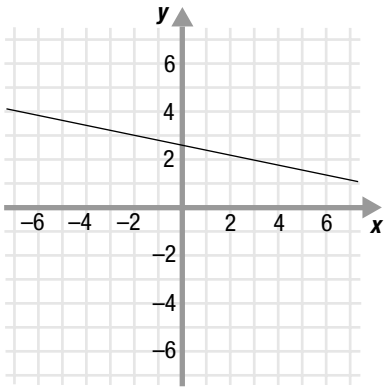

Figure 4.1.6

12. Draw the line that passes through the point (1, 3) and has slope $m = 0$.