Name _____   Date _____

Find the slope.

1. $\left(2, -\frac{1}{4}\right)$ $\left(1\frac{1}{2}, \frac{1}{4}\right)$

2. (c, d) $(c, -d)$

3. $(k+3, 2k)$ (k, k)

4. $(5a, a+2)$ $(-a, a-1)$

5. $(n, -4k)$ $(2k+n, -4k)$

6. $(y, x-1)$ $(3y, 1-x)$

Find the midpoint.

7. $(-8, -3)$ $(5, 0)$

8. $\left(\frac{3}{4}, \frac{1}{3}\right)$ $\left(-\frac{1}{4}, \frac{1}{6}\right)$

9. $(2p, p-3)$ $(4p, p+1)$

10. $(3b, -5a)$ $(2a-b, a+2b)$

Find the distance.

11. $(-2, 2)$ $(0, -2)$

12. $(3, 0)$ $(2.5, -1.2)$

13. $(5k, -5k)$ $(0, 7k)$

14. $(7a, a+3)$ $(a, -7a+3)$

Solve.

15. Which points are on the line: $-6x - 3y = 0$?
    $A(\frac{1}{2}, -2)$ $B(1, 2)$ $C(-3, 6)$ $D(6, -3)$

16. Which points are on the line: $2x + 5y = -3$?
    $A(0, 0.6)$ $B(1, -1)$ $C(-1.5, 0)$ $D(-6, 3)$

17. Which points are on the line: $-x + 3y = 8$?
    $A(7, 5)$ $B(-5, 1)$ $C(1, 3)$ $D(-8, 0)$

Write the equation of the line in standard form.

18. slope $= -\frac{3}{10}$, contains point $(8, -3)$

19. slope $= 0.25$, contains point $(-2, 3.5)$

20. x-intercept $= -3$, y-intercept $= 9$

21. contains $(-1, 16)$ and $(2, -5)$

22. Line PQ contains the points $(x, x + 3)$ and $(1, x)$, and has a slope of $-\frac{1}{3}$. Find the value of x.

23. A segment has endpoints at $(n - 6, 5p)$ and $(6 - n, -p)$. What is the midpoint?

24. What are the x- and y-intercepts of the line: $4y = 21x - 14$?

25. What are the x- and y-intercepts of the line: $10x - 9y - 24 = 0$?

26. Given $A(-4, 5)$, $B(4, -9)$ and $C(3, -2)$. Write the equation of the line which passes through C and the midpoint of $\overline{AB}$.

27. Given $K(0, 5)$, $M(-1, -2)$ and $N(7, 10)$. Write the equation of the line which passes through K and the midpoint of $\overline{MN}$.

28. Write the equation of the line that contains $(-12, 5)$ and is perpendicular to the line $y = 3x + 6$.

29. Given $P(-3, -4)$, $Q(-8, -3)$ and $R(-1, 4)$. Write the equation of the line which passes through Q and is perpendicular to $\overleftrightarrow{PR}$.

30. Given $E(-7, 4)$ and $F(1, -8)$. Write the equation of the line which is perpendicular to $\overleftrightarrow{EF}$ and contains the midpoint of $\overline{EF}$.

Tell whether the points listed in the table are collinear. If so, write the equation of the line that passes through them.

31.

x	-8	-4	0	12
y	2	3	4	7

32.

x	-4	-2	2	4
y	-9	-6	0	3

33.

x	-2	-1	0	1	2
y	-4	-1	0	-1	-4

Solve.

34. $x + y - 9 = 0$
    $-10x + 6y - 6 = 0$

35. $3x + 2y - 6 = 0$
    $x + 2y + 6 = 0$

36. $12x + 5y = 8$
    $4x + 9y = 0$

37. $5x + 8y + 2 = 0$
    $3x + 2y + 8 = 0$

38. $\frac{1}{5}x + \frac{1}{4}y = 0$

     $-\frac{1}{2}x - \frac{5}{4}y = 5$

39. $-\frac{2}{3}x - \frac{1}{2}y = 1$

     $\frac{1}{2}x - \frac{1}{8}y = -\frac{7}{4}$

40. $0.1x + 0.3y = 7$

     $-0.7x + 0.1y = -5$

41. $y - 3 = \frac{1}{5}(x + 1)$

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

42. $-5x + 3y = -14$

     $\frac{x}{5} - \frac{y}{3} = -2$

43. $\frac{x}{6} + \frac{y}{2} = 1$

     $\frac{x}{3} - \frac{y}{2} = 1$

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

     $\frac{y}{x - 10} = \frac{1}{2}$

45. $\frac{y - 1}{x + 5} = 3$

     $\frac{y + 1}{x - 5} = 3$

46. $\dfrac{y-3}{x-10} = \dfrac{1}{2}$

$\dfrac{y}{x-4} = \dfrac{1}{2}$

47. $y = x^2 + 2$

$y = -3x + 2$

48. $y = 2x^2 - 4$

$y = x^2 + 5$

49. The sum of the digits of a two-digit number is 13. The tens digit is 2 less than twice the ones digit. What is the number?

50. The sum of the digits of a two-digit number is 14. If the digits are reversed, the number is increased by 18. What is the number?

51. The perimeter of a rectangle is 44 in. If the length is increased by twice the width, the result is 31 in. Find the length and width of the rectangle.

Math 9 Enriched   Ch 3 Review   Mr. Young   10/01/2011

Answer List

1. -1	2. undef.	3. $\frac{k}{3}$
4. $\frac{1}{2a}$	5. 0	6. $\frac{1-x}{y}$
7. $\left(-1\frac{1}{2}, -1\frac{1}{2}\right)$	8. $\left(\frac{1}{4}, \frac{1}{4}\right)$	9. $(3p, p-1)$
10. $(a+b, -2a+b)$	11. $2\sqrt{5}$	12. 1.3
13. $13k$	14. $10a$	15. C
16. B, C	17. all	18. $y = -\frac{3}{10}x - \frac{3}{5}$
19. $y = 0.25x + 4$	20. $y = 3x + 9$	21. $y = -7x + 9$
22. -8	23. $(0, 2p)$	24. $\frac{2}{3}$ and $-\frac{7}{2}$
25. $\frac{12}{5}$ and $-\frac{8}{3}$	26. $y = -2$	27. $y = -\frac{1}{3}x + 5$
28. $y = -\frac{1}{3}x + 1$	29. $y = -\frac{1}{4}x - 5$	30. $y = \frac{2}{3}x$
31. $y = \frac{1}{4}x + 4$	32. $y = \frac{3}{2}x - 3$	33. non-colinear, $y = -x^2$
34. $(3, 6)$	35. $(6, -6)$	36. $\left(\frac{9}{11}, -\frac{4}{11}\right)$
37. $\left(-\frac{30}{7}, \frac{17}{7}\right)$	38. $(10, -8)$	39. $(-3, 2)$
40. $(10, 20)$	41. coincide	42. $(10, 12)$
43. $\left(4, \frac{2}{3}\right)$	44. $(6, -2)$	45. Ø
46. coincide	47. $(0, 2)$ and $(-3, 11)$	48. $(3, 14)$ and $(-3, 14)$
49. 85	50. 68	51. $13, 9$ in.

Catalog List

1. ALG PA 65	2. ALG PA 97	3. ALG PA 102
4. ALG PA 108	5. ALG PA 111	6. ALG PA 112
7. ALG PB 23	8. ALG PB 39	9. ALG PB 49
10. ALG PB 56	11. ALG PC 42	12. ALG PC 60
13. ALG PC 62	14. ALG PC 63	15. ALG PD 33
16. ALG PD 41	17. ALG PD 42	18. ALG PF 36
19. ALG PF 50	20. ALG PF 74	21. ALG PF 108
22. ALG PG 64	23. ALG PG 86	24. ALG PG 129
25. ALG PG 130	26. ALG PG 210	27. ALG PG 212
28. ALG PH 42	29. ALG PH 50	30. ALG PH 56
31. ALG PL 19	32. ALG PL 20	33. ALG PL 26
34. ALG QA 149	35. ALG QA 156	36. ALG QB 82
37. ALG QB 83	38. ALG QB 102	39. ALG QB 108
40. ALG QB 120	41. ALG QC 19	42. ALG QC 22
43. ALG QC 30	44. ALG QC 42	45. ALG QC 45
46. ALG QC 46	47. ALG QC 90	48. ALG QC 93
49. ALG QE 12	50. ALG QE 13	51. ALG QE 25