Exam Review Material Set A

Find the value of x or y so that the line through the points has the given slope.

1) $(0, -5)$ and $(x, 2)$; slope: $-\frac{7}{6}$

2) $(x, 5)$ and $(-7, -6)$; slope: $\frac{11}{7}$

3) $(5, 3)$ and $(0, y)$; slope: $\frac{11}{5}$

4) $(9, 9)$ and $(2, y)$; slope: 0

5) $(9, -7)$ and $(3, y)$; slope: -2

6) $(-2, -6)$ and $(8, y)$; slope: $\frac{7}{10}$

Find the slope of the line through each pair of points.

7) $(20, -3)$, $(11, 16)$

8) $(-18, 17)$, $(-1, 5)$

9) $(-20, 4)$, $(9, 5)$

10) $(15, -14)$, $(4, 8)$

Find the slope of each line.

11) $6 + 3y = -x$

12) $-5 = 2x - 5y$

Find the slope of a line parallel to each given line.

13) $-x = -2y + 6$

14) $3y = -8x + 9$

Find the slope of a line perpendicular to each given line.

15) $y = \frac{3}{4}x - 1$

16) $y = -\frac{7}{5}x - 4$

Solve each equation by factoring.

17) $x^2 - 13x + 40 = 0$

18) $n^2 - 14n + 49 = 0$

19) $x^2 - 11x + 24 = 0$

20) $n^2 + 4n - 12 = 0$

Find the midpoint of the line segment with the given endpoints.

21) (5, –4), (–2, –5)

22) (6, –5), (3, –6)

23) (7, 10), (6, 5)

24) (–6, –5), (6, –7)

Given the midpoint and one endpoint of a line segment, find the other endpoint.

25) Endpoint: (10, 9), midpoint: (–1, 5)

26) Endpoint: (1, –2), midpoint: (3, –10)

27) Endpoint: (–10, 10), midpoint: (–6, 8)

28) Endpoint: (–7, –6), midpoint: (–7, 9)

29) Endpoint: (–8, –3), midpoint: (–8, 5)

30) Endpoint: (10, –2), midpoint: (5, –8)

Write the slope-intercept form of the equation of the line through the given points.

31) through: (4, 0) and (−1, −3)

32) through: (1, −3) and (2, 1)

33) through: (−2, 1) and (0, 1)

34) through: (−2, 1) and (0, 5)

Write the slope-intercept form of the equation of the line described.

35) through: (−2, 4), parallel to $y = -x - 3$

36) through: (5, 0), parallel to $y = x - 4$

37) through: (−5, 1), perp. to $y = x - 3$

38) through: (1, −4), perp. to $y = \frac{1}{4}x - 2$

Solve each equation.

39) $4(5p + 4) - 3p = -1$

40) $-6(p + 3) = -24$

41) $-8(-2v - 4) + v = 66$

42) $-6(5 + 3r) = -12$

43) $12 - 4n = -2(-3n - 6)$

44) $3(-6k + 2) = -18 + 6k$

45) $10 + 5p = 5(2 - 5p)$

46) $-5x - 6(4x + 7) = -19 - 6x$

Solve each proportion.

47) $\frac{k + 7}{13k + 13} = \frac{12}{5}$

48) $\frac{13m + 6}{2} = \frac{m - 13}{11}$

49) $\frac{2}{13} = \frac{x-9}{11x-7}$

50) $\frac{9}{14} = \frac{13x+12}{x+9}$

Simplify each expression.

51) $\frac{k^2-2k-35}{k-7} \cdot \frac{8k^2}{10k+50}$

52) $\frac{1}{k+5} \div \frac{7k}{k^2-k-30}$

53) $\frac{2x^2-6x}{2x^2} \div (2x^2+6x)$

54) $\frac{v^2-14v+40}{3v-12} \cdot \frac{7v}{v-10}$

55) $\frac{3}{8r^2-24r} \div \frac{r+4}{8r^2-24r}$

56) $\frac{7n}{7n^2+28n} \cdot 5n$

57) $\frac{r-1}{r^2-4r+3} \cdot 3r^2$

58) $\frac{v^2+14v+45}{v^2+v-20} \cdot \frac{v-4}{10}$

Solve each equation.

59) $\frac{n}{10} = -4$

60) $\frac{n}{18} = 3$

61) $x - 19 = -30$

62) $6 = x - 6$

MATH 101

Exam Review Material Set A

Find the value of x or y so that the line through the points has the given slope.

1) $(0, -5)$ and $(x, 2)$; slope: $-\frac{7}{6}$

-6

2) $(x, 5)$ and $(-7, -6)$; slope: $\frac{11}{7}$

0

3) $(5, 3)$ and $(0, y)$; slope: $\frac{11}{5}$

-8

4) $(9, 9)$ and $(2, y)$; slope: 0

9

5) $(9, -7)$ and $(3, y)$; slope: -2

5

6) $(-2, -6)$ and $(8, y)$; slope: $\frac{7}{10}$

1

Find the slope of the line through each pair of points.

7) $(20, -3)$, $(11, 16)$

$-\frac{19}{9}$

8) $(-18, 17)$, $(-1, 5)$

$-\frac{12}{17}$

9) $(-20, 4)$, $(9, 5)$

$\frac{1}{29}$

10) $(15, -14)$, $(4, 8)$

-2

Find the slope of each line.

11) $6 + 3y = -x$

$-\frac{1}{3}$

12) $-5 = 2x - 5y$

$\frac{2}{5}$

Find the slope of a line parallel to each given line.

13) $-x = -2y + 6$

$\frac{1}{2}$

14) $3y = -8x + 9$

$-\frac{8}{3}$

Find the slope of a line perpendicular to each given line.

15) $y = \frac{3}{4}x - 1$

$-\frac{4}{3}$

16) $y = -\frac{7}{5}x - 4$

$\frac{5}{7}$

Solve each equation by factoring.

17) $x^2 - 13x + 40 = 0$

{8, 5}

18) $n^2 - 14n + 49 = 0$

{7}

19) $x^2 - 11x + 24 = 0$

{3, 8}

20) $n^2 + 4n - 12 = 0$

{−6, 2}

Find the midpoint of the line segment with the given endpoints.

21) (5, −4), (−2, −5)

(1.5, −4.5)

22) (6, −5), (3, −6)

(4.5, −5.5)

23) (7, 10), (6, 5)

(6.5, 7.5)

24) (−6, −5), (6, −7)

(0, −6)

Given the midpoint and one endpoint of a line segment, find the other endpoint.

25) Endpoint: (10, 9), midpoint: (−1, 5)

(−12, 1)

26) Endpoint: (1, −2), midpoint: (3, −10)

(5, −18)

27) Endpoint: (−10, 10), midpoint: (−6, 8)

(−2, 6)

28) Endpoint: (−7, −6), midpoint: (−7, 9)

(−7, 24)

29) Endpoint: (−8, −3), midpoint: (−8, 5)

(−8, 13)

30) Endpoint: (10, −2), midpoint: (5, −8)

(0, −14)

Write the slope-intercept form of the equation of the line through the given points.

31) through: (4, 0) and (−1, −3)

$y = \frac{3}{5}x - \frac{12}{5}$

32) through: (1, −3) and (2, 1)

$y = 4x - 7$

33) through: (−2, 1) and (0, 1)

$y = 1$

34) through: (−2, 1) and (0, 5)

$y = 2x + 5$

Write the slope-intercept form of the equation of the line described.

35) through: (−2, 4), parallel to $y = -x - 3$

$y = -x + 2$

36) through: (5, 0), parallel to $y = x - 4$

$y = x - 5$

37) through: (−5, 1), perp. to $y = x - 3$

$y = -x - 4$

38) through: (1, −4), perp. to $y = \frac{1}{4}x - 2$

$y = -4x$

Solve each equation.

39) $4(5p + 4) - 3p = -1$

$\{-1\}$

40) $-6(p + 3) = -24$

$\{1\}$

41) $-8(-2v - 4) + v = 66$

$\{2\}$

42) $-6(5 + 3r) = -12$

$\{-1\}$

43) $12 - 4n = -2(-3n - 6)$

$\{0\}$

44) $3(-6k + 2) = -18 + 6k$

$\{1\}$

45) $10 + 5p = 5(2 - 5p)$

$\{0\}$

46) $-5x - 6(4x + 7) = -19 - 6x$

$\{-1\}$

Solve each proportion.

47) $\frac{k + 7}{13k + 13} = \frac{12}{5}$

$\{-\frac{121}{151}\}$

48) $\frac{13m + 6}{2} = \frac{m - 13}{11}$

$\{-\frac{92}{141}\}$

49) $\frac{2}{13} = \frac{x-9}{11x-7}$

$\{-\frac{103}{9}\}$

50) $\frac{9}{14} = \frac{13x+12}{x+9}$

$\{-\frac{87}{173}\}$

Simplify each expression.

51) $\frac{k^2-2k-35}{k-7} \cdot \frac{8k^2}{10k+50}$

$\frac{4k^2}{5}$

52) $\frac{1}{k+5} \div \frac{7k}{k^2-k-30}$

$\frac{k-6}{7k}$

53) $\frac{2x^2-6x}{2x^2} \div (2x^2+6x)$

$\frac{x-3}{2x^2(x+3)}$

54) $\frac{v^2-14v+40}{3v-12} \cdot \frac{7v}{v-10}$

$\frac{7v}{3}$

55) $\frac{3}{8r^2-24r} \div \frac{r+4}{8r^2-24r}$

$\frac{3}{r+4}$

56) $\frac{7n}{7n^2+28n} \cdot 5n$

$\frac{5n}{n+4}$

57) $\frac{r-1}{r^2-4r+3} \cdot 3r^2$

$\frac{3r^2}{r-3}$

58) $\frac{v^2+14v+45}{v^2+v-20} \cdot \frac{v-4}{10}$

$\frac{v+9}{10}$

Solve each equation.

59) $\frac{n}{10} = -4$

$\{-40\}$

60) $\frac{n}{18} = 3$

$\{54\}$

61) $x - 19 = -30$

$\{-11\}$

62) $6 = x - 6$

$\{12\}$