Name: _____ Class: _____ Date: _____ ID: A

Semester 2 Final Cumulative Review (2020-2021)

Multiple Choice
Identify the choice that best completes the statement or answers the question.

Find the value of *y* for the given value of *x*.

____ 1. $y = \frac{x}{2} + 7; \quad x = 7$

a. 7
b. $10\frac{1}{2}$
c. $3\frac{1}{2}$
d. 14

____ 2. $y = 8x + 3; \quad x = 0.5$

a. 4
b. 7
c. 3.5
d. 11

Use the graph or table to write a linear function that relates *y* to *x*.

____ 3.

x	–3	0	3	6
y	5	6	7	8

a. $y = \frac{1}{3}x - 6$
b. $y = \frac{1}{3}x + 6$
c. $y = -\frac{1}{3}x + 6$
d. $y = 3x - 6$

____ 4.

x	–4	–2	0	2
y	–2	–1	0	1

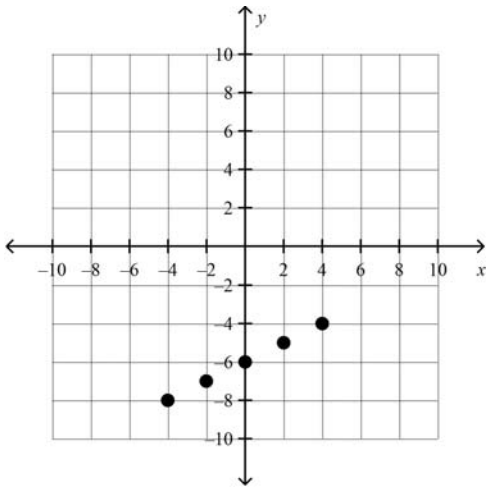
a. $y = 2x$
b. $y = -\frac{1}{2}x$
c. $y = -2x$
d. $y = \frac{1}{2}x$

____ 5.

x	–4	–2	0	2
y	3	–1	–5	–9

a. $y = -2x - 5$
b. $y = -\frac{1}{2}x + 5$
c. $y = -2x + 5$
d. $y = 2x - 5$

____ 6.



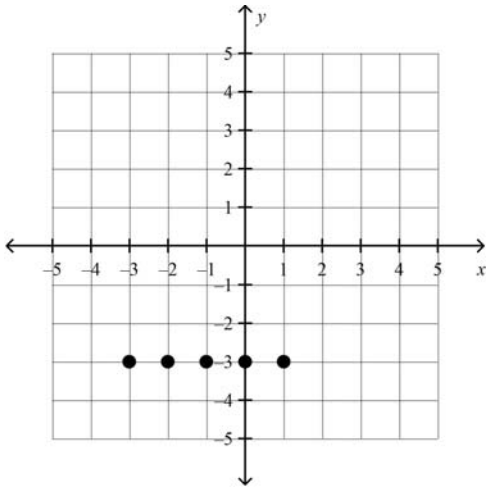
a. $y = \frac{1}{2}x + 6$

b. $y = 2x + 6$

c. $y = -\frac{1}{2}x - 6$

d. $y = \frac{1}{2}x - 6$

____ 7.



a. $x = -3$

b. $y = -3$

c. $x = y - 3$

d. $y = x - 3$

____ 8. What is the value of w in the equation below when $z = 4$?

$w = 12z - 9.7$

a. 2.3

b. 38.3

c. 57.7

d. 114.3

____ 9. Which method can you use to eliminate a variable from the following system of equations?

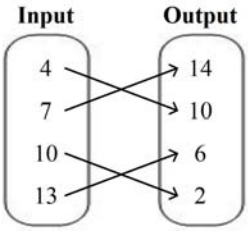
$2x - 6y = 3$

$4x + y = -3$

a. Add the first equation to the second equation.
b. Subtract the first equation from the second equation.
c. Add twice the first equation to the second equation.
d. Subtract twice the first equation from the second equation.

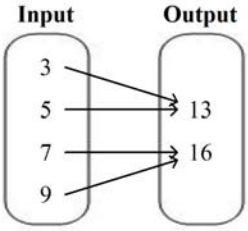
List the ordered pairs shown in the mapping diagram.

____ 10.



a. (4, 10), (7, 14), (10, 2), (13, 6)
b. (4, 14), (7, 10), (10, 6), (13, 2)
c. (14, 7), (10, 4), (6, 13), (2, 10)
d. (4, 10), (7, 14), (10, 6), (13, 2)

____ 11.



a. (3, 13), (7, 16)
b. (3, 13), (5, 13), (7, 16), (9, 16)
c. (5, 13), (9, 16)
d. (3, 13), (5, 13), (16, 7), (9, 16)

Find the value of *x* for the given value of *y*.

____ 12. $y = 3x - 9; \quad y = 24$

a. 63
b. 33
c. 17
d. 11

Write a function rule for the statement.

____ 13. The output is six times the input.

a. $y = 6 + x$
b. $y = x \div 6$
c. $x = 6y$
d. $y = 6x$

____ 14. The output is five less than the input.

a. $y = 5$
b. $y = x - 5$
c. $y = 5x$
d. $y = 5 - x$

____ 15. The output is one-fifth of the input.

a. $x = \frac{1}{5}y$

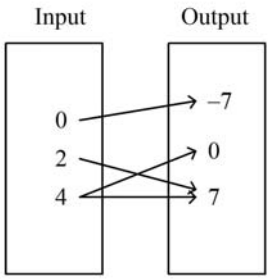
b. $y = 5x$

c. $y = x \div \frac{1}{5}$

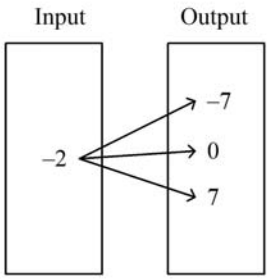
d. $y = \frac{1}{5}x$

____ 16. Determine which relation is a function.

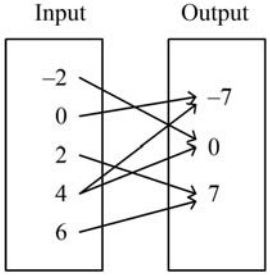
a.



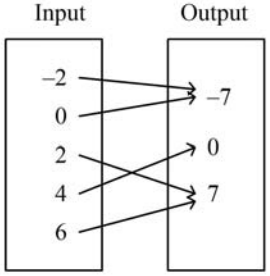
c.



b.



d.



Write an equation that describes the function.

____ 17.

Input, x	Output, y
3	8
6	11
9	14
12	17

a. $y = x + 5$

b. $y = x + 3$

c. $y = x + 8$

d. $y = x - 3$

____ 18.

Input, x	Output, y
3	18
6	36
9	54
12	72

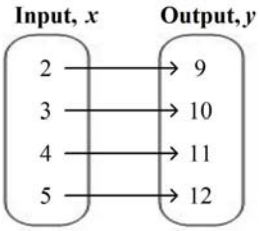
a. $y = 6x$

b. $y = x + 30$

c. $y = x \div 6$

d. $y = x + 15$

____ 19.



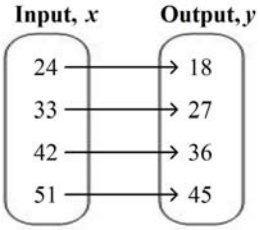
a. $y = \frac{2}{9}x$

b. $y = 2x + 5$

c. $y = x + 7$

d. $y = \frac{9}{2}x$

____ 20.



a. $y = 2x - 30$

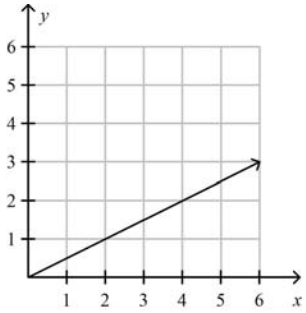
b. $y = \frac{4}{3}x$

c. $y = x - 6$

d. $y = \frac{3}{4}x$

Which function does the graph represent?

____ 21.



a. $y = x$

b. $y = 2x - 1$

c. $y = 0.5x$

d. $y = x + 1$

____ 22. Which equation does not belong with the other three?

a. $12 = 7xy$

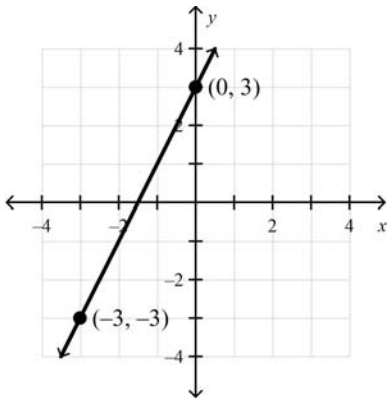
b. $y = \frac{7}{12}x$

c. $60y = 35x$

d. $12y = 7x$

Find the slope of the line.

____ 23.



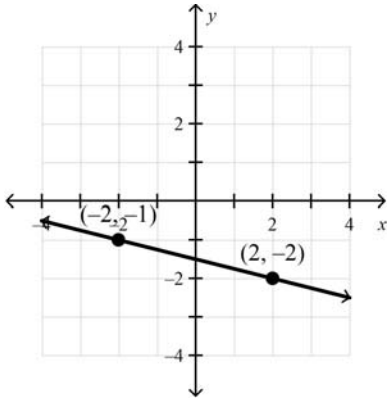
a. –2

c. $-\frac{1}{2}$

b. $\frac{1}{2}$

d. 2

____ 24.



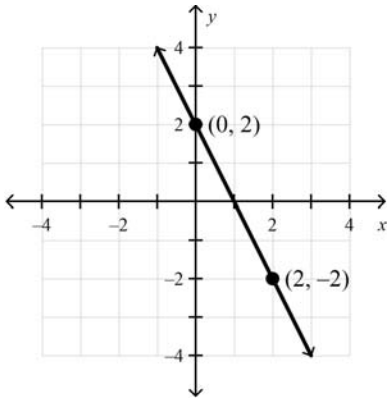
a. $-\frac{1}{4}$

c. –4

b. $\frac{1}{4}$

d. 4

____ 25.



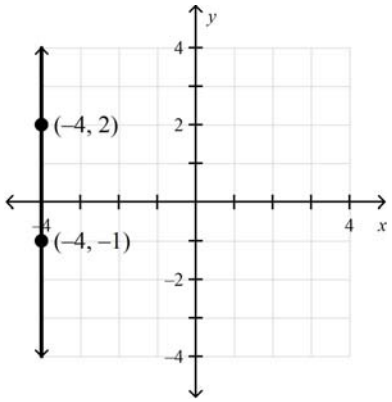
a. $-\frac{1}{2}$

b. $\frac{1}{2}$

c. 2

d. –2

____ 26.



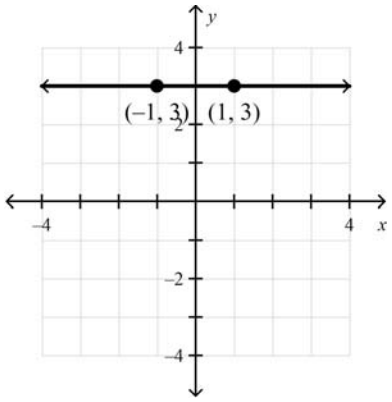
a. 0

b. undefined

c. –1

d. 1

____ 27.



a. 1

b. –0

c. –1

d. –2

Find the slope and the *y*-intercept of the graph of the linear equation.

____ 28. $y = \frac{2}{3}x + 9$

a. Slope: $\frac{3}{2}$; *y*-intercept: 9
b. Slope: $\frac{2}{3}$; *y*-intercept: 9
c. Slope: $\frac{1}{9}$; *y*-intercept: $\frac{2}{3}$
d. Slope: 2; *y*-intercept: $\frac{2}{3}$

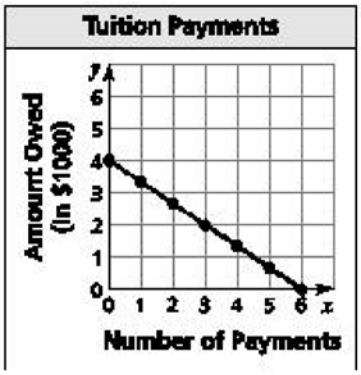
____ 29. $2x - 2y = 18$

a. slope: 1; *y*-intercept: 18
b. slope: 2; *y*-intercept: 1
c. slope: 1: *y*-intercept: –9
d. slope: $\frac{1}{18}$; *y*-intercept: 1

____ 30. $-4y + 2x = -16$

a. slope: $\frac{1}{2}$; *y*-intercept: 4
b. slope: $-\frac{1}{16}$; *y*-intercept: $\frac{1}{2}$
c. slope: 2; *y*-intercept: $\frac{1}{2}$
d. slope: $\frac{1}{2}$; *y*-intercept: –16

____ 31. Carla plotted the points on the graph below to show how the amount she owes for tuition decreases as the number of tuition payments increases. The slope of the line segment joining these points is $-\frac{2}{3}$.



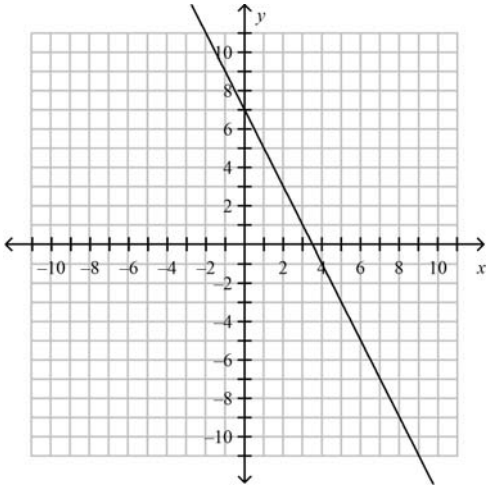
What does the slope of the line segment represent?

a. Each payment decreases the amount owed by $4,000.
b. Each payment decreases the amount owed by $0.66.
c. For every 3 payments, the amount owed decreases by $2,000.
d. For every 2 payments, the amount owed decreases by $3,000.

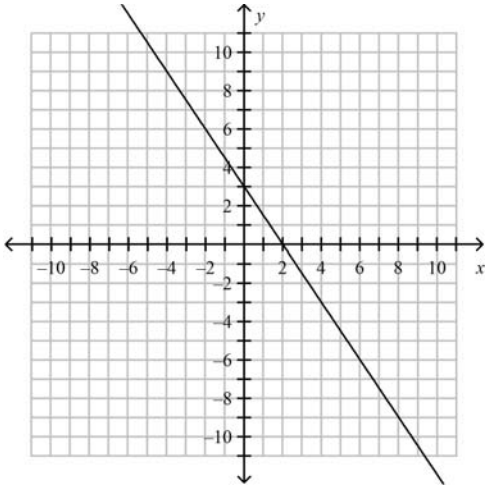
Graph the line with the given slope that passes through the given point.

____ 32. slope = –2; $(2,3)$

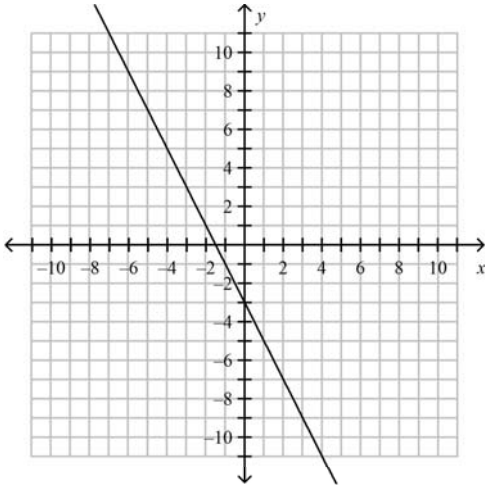
a.



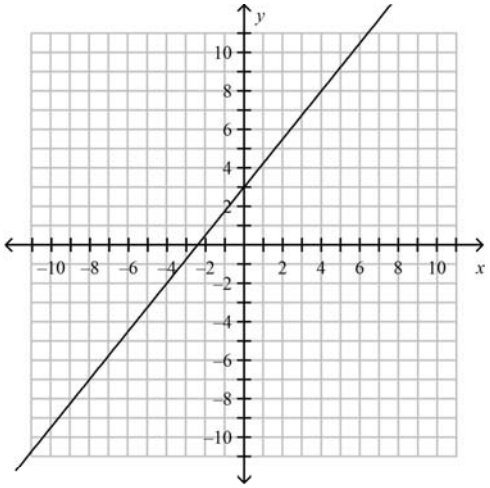
c.



b.

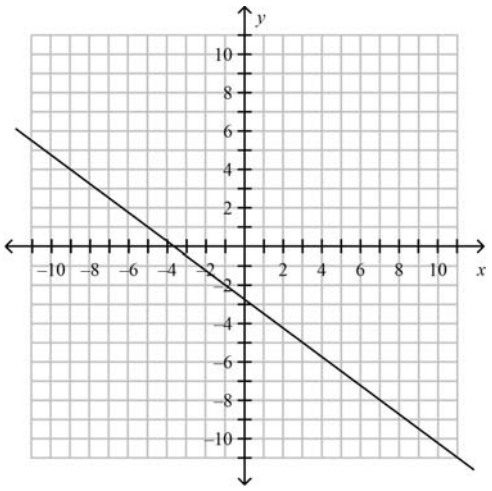


d.

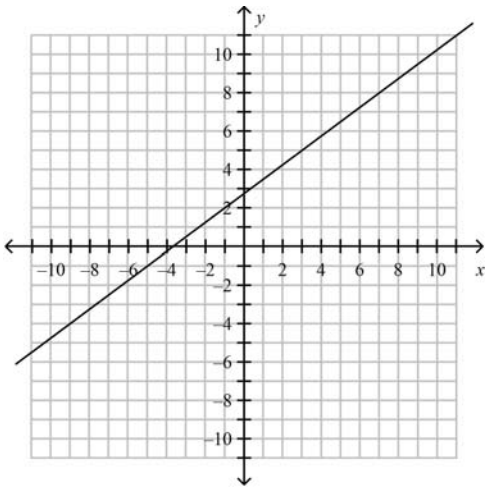


____ 33. slope $= \frac{3}{4}$; $(-5,-1)$

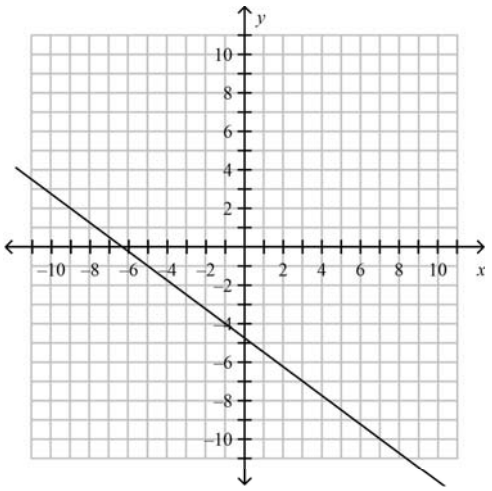
a.



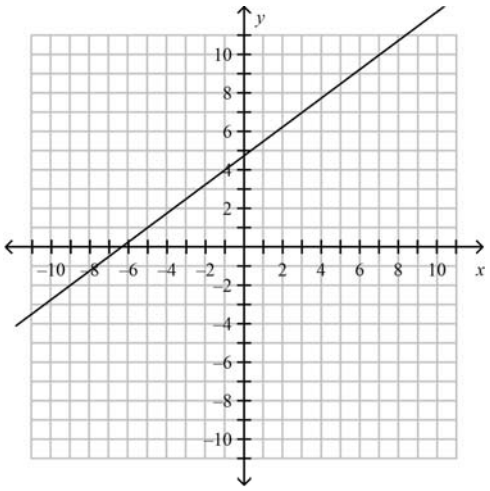
c.



b.



d.



Find the slope of the line through the given points.

____ 34. (7, –5), (7, 7)

a. $-\frac{5}{7}$

b. $\frac{12}{7}$

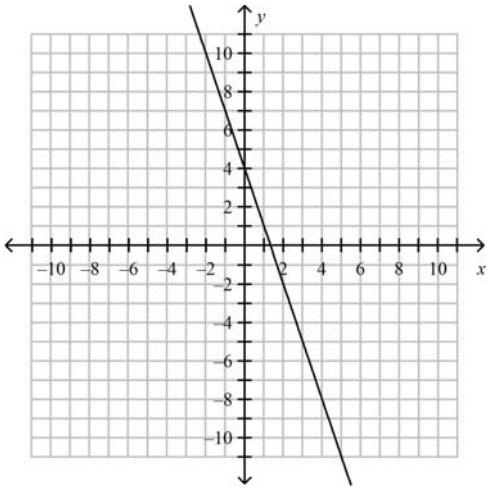
c. 0

d. undefined

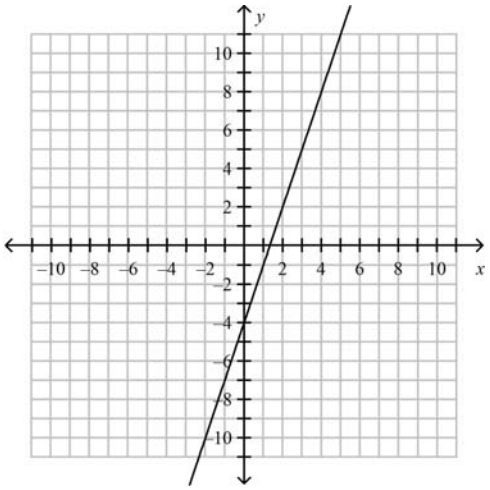
Graph the linear function using slope-intercept form.

____ 35. $y = 3x + 4$

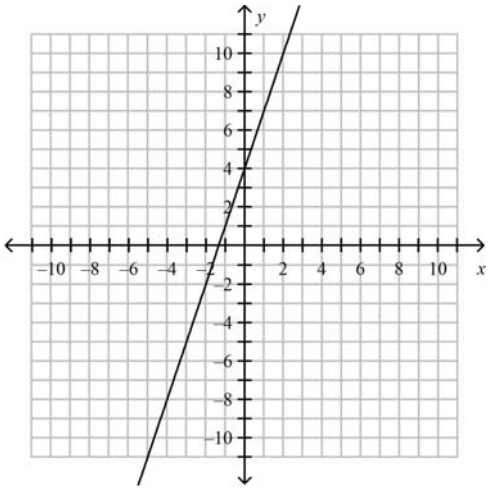
a.



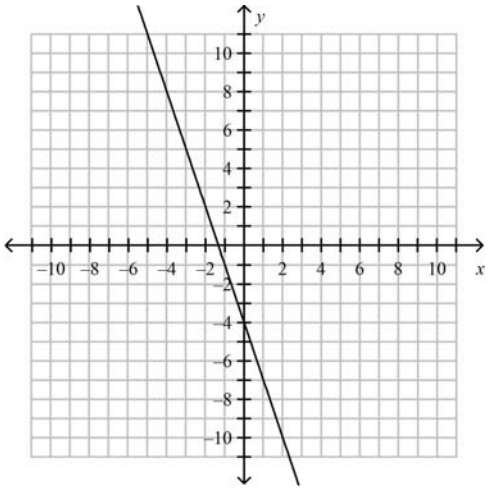
c.



b.

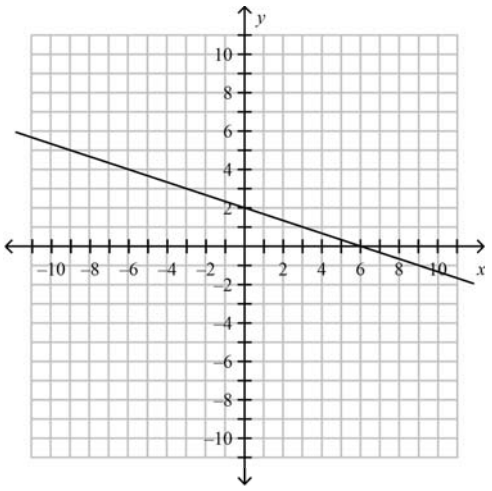


d.

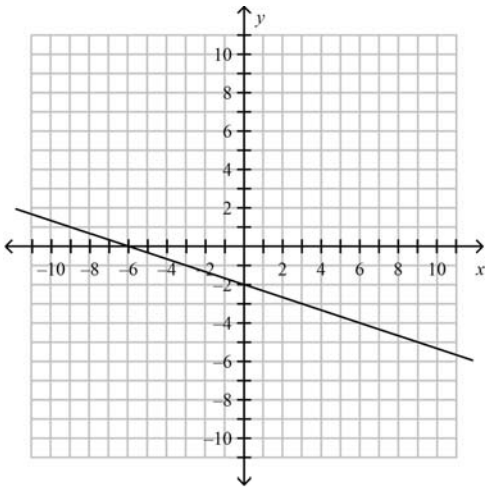


____ 36. $y = -\frac{1}{3}x - 2$

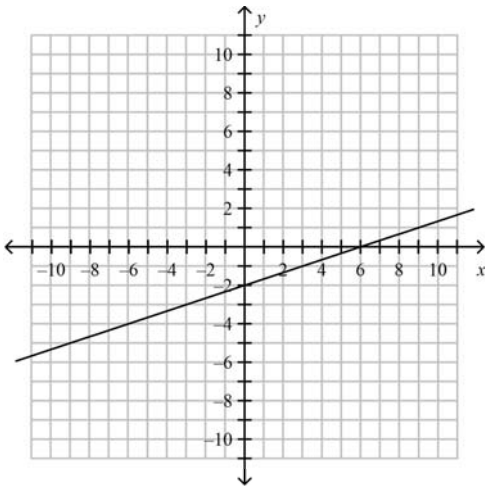
a.



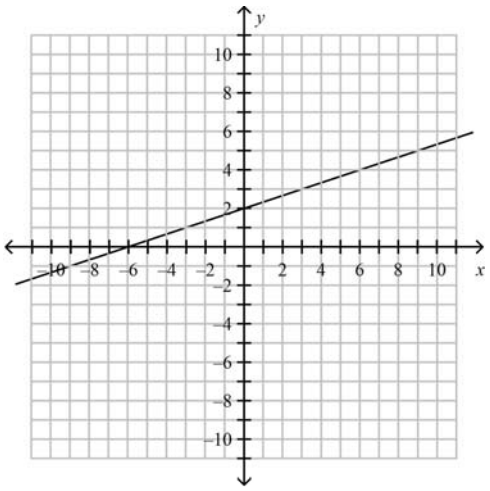
c.



b.

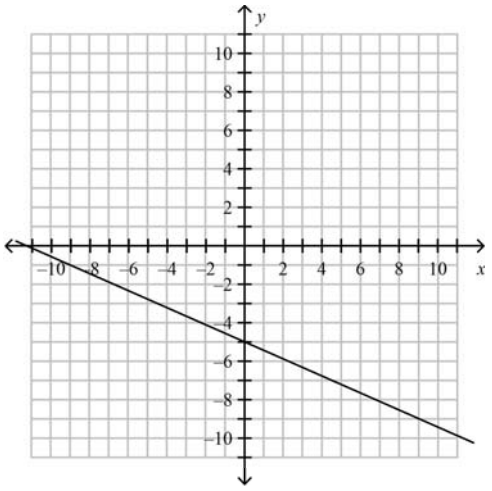


d.

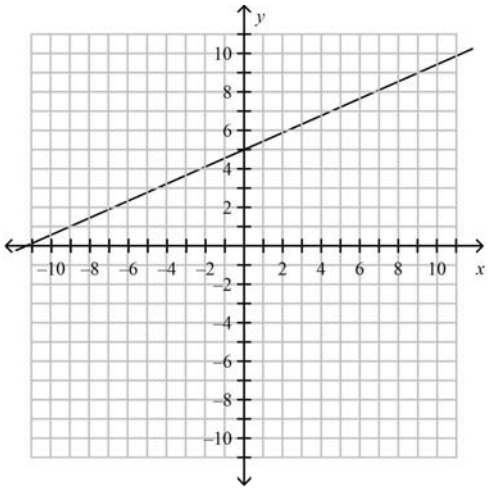


____ 37. $-9y - 4x = -45$

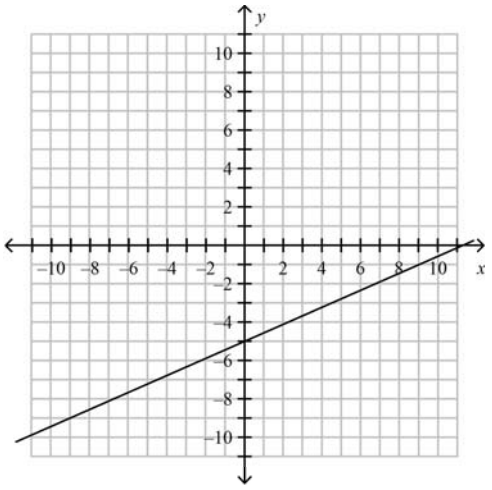
a.



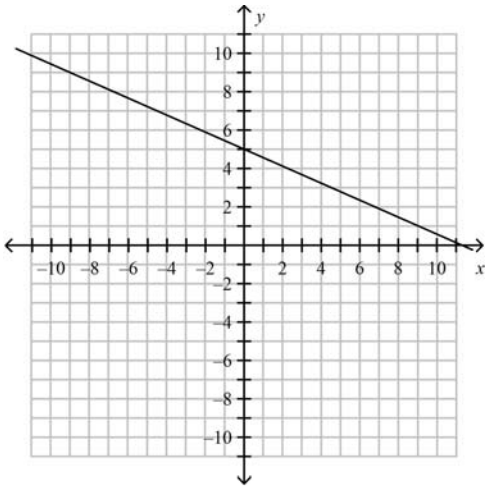
c.



b.

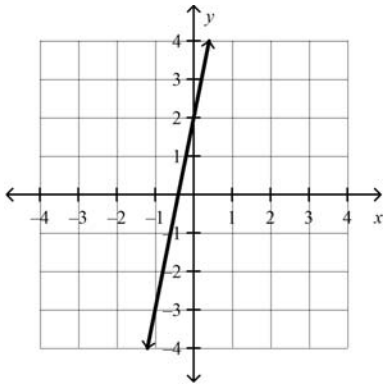


d.



Which linear equation represents the graph?

____ 38.



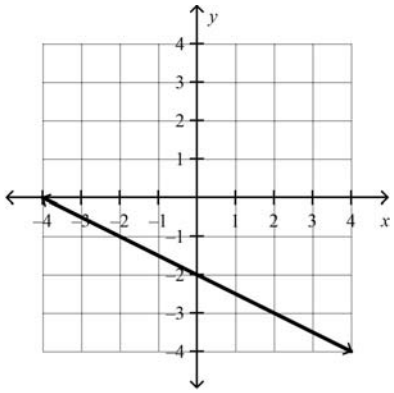
a. $y = \frac{1}{5}x + 3$

b. $y = 5x + 2$

c. $y = 5x - 2$

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

____ 39.



a. $y = -2x + 2$

b. $y = 2x + 2$

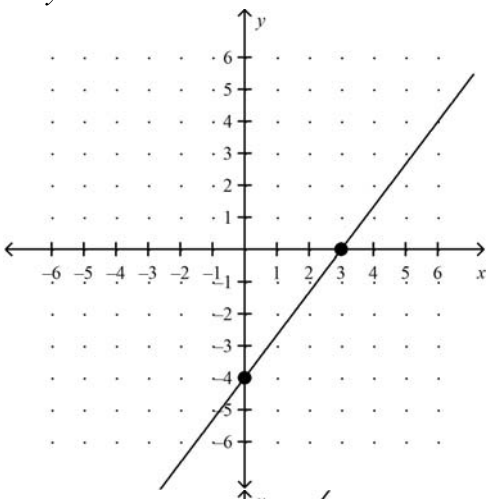
c. $y = \frac{1}{2}x - 2$

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

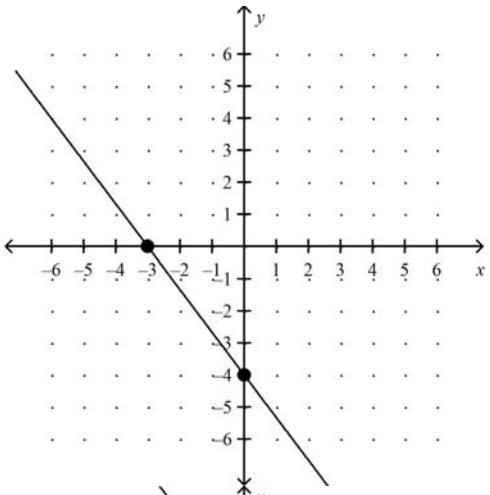
____ 40. Match the equation with its graph.

$16x + 12y = -48$

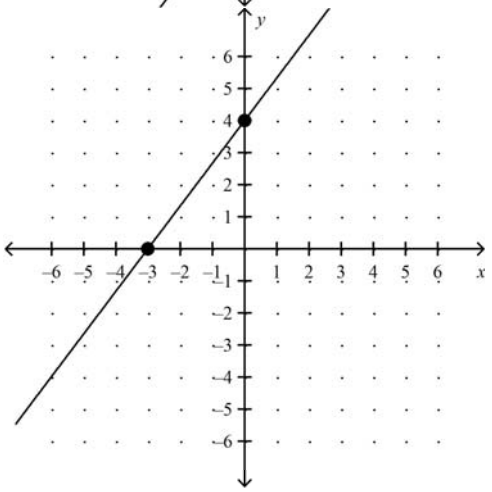
a.



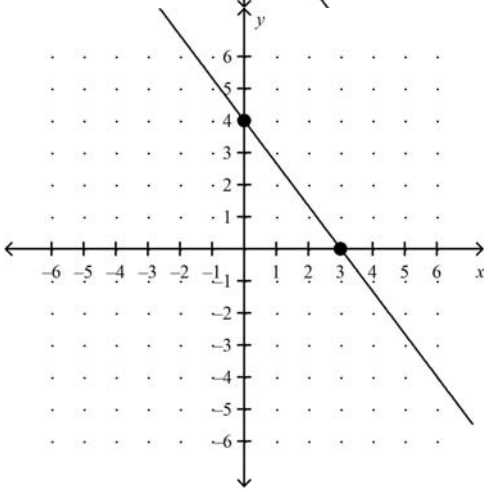
c.



b.



d.



Write the linear equation in slope-intercept form.

____ 41. $-\frac{1}{5}x + y = 12$

a. $y = \frac{1}{5}x - 12$

c. $x = 5y - \frac{12}{5}$

b. $y = 5x + 12$

d. $y = \frac{1}{5}x + 12$

____ 42. $-x + y = 16$

a. $y = x - 16$

c. $y = x + 16$

b. $y = -x + 16$

d. $x = y + 16$

Write in point-slope form an equation of the line that passes through the given point and has the given slope.

____ 43. $(3, 0)$; $m = -\frac{2}{3}$

a. $y + 3 = -\frac{2}{3}(x - 0)$

b. $y + 0 = -\frac{2}{3}(x + 3)$

c. $y - 0 = -\frac{2}{3}(x - 3)$

d. $y - 3 = -\frac{2}{3}(x - 0)$

____ 44. $(5, 9)$; $m = \frac{3}{5}$

a. $y + 9 = \frac{3}{5}(x + 5)$

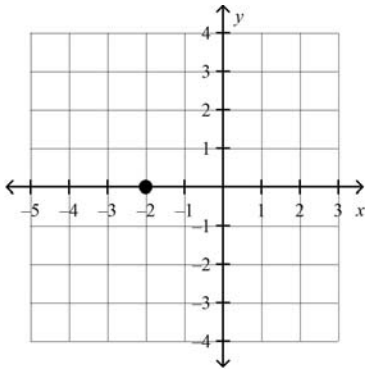
b. $y - 9 = \frac{3}{5}(x - 5)$

c. $y - 5 = \frac{3}{5}(x - 9)$

d. $y + 5 = \frac{3}{5}(x + 9)$

Use point-slope form to write an equation of the line with the given slope that passes through the given point.

____ 45. $m = 2$



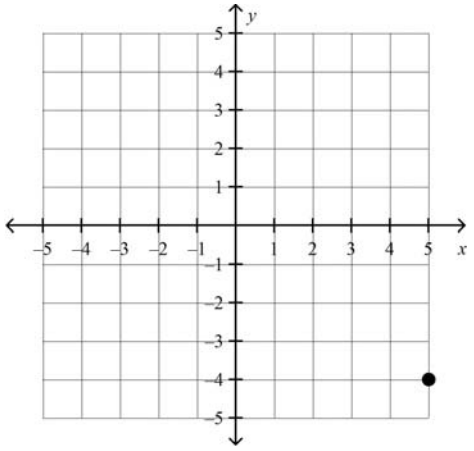
a. $y + 2 = 2(x - 0)$

b. $y - 0 = 2(x + 2)$

c. $y - 0 = 2(x - 2)$

d. $y - 2 = 2(x + 0)$

____ 46. $m = -\frac{4}{5}$



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

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

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

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

Write an equation of the line that passes through the points.

____ 47. (–1, 5), (0, 5)

a. $y = -10x + -5$

b. $y = 5$

c. $y = -1$

d. $y = -\frac{1}{10}x + \frac{49}{10}$

____ 48. (–5, –1), (0, –1)

a. $y = \frac{2}{5}x + 1$

b. $y = -1$

c. $y = \frac{5}{2}x + \frac{23}{2}$

d. $y = -5$

Write in slope-intercept form an equation of the line that passes through the given points.

____ 49. (–1, 6), (2, 9)

a. $y = -x + 5$

b. $y = 3x + 9$

c. $y = x + 7$

d. $y = 5x - 1$

____ 50. (3, 1), (9, 3)

a. $y = \frac{1}{3}x$

b. $y = 5x - 14$

c. $y = \frac{1}{3}x - 4$

d. $y = 3x - 8$

____ 51. (1, 3), (2, 6)

a. $y = 3x - 3$

b. $y = 3x$

c. $y = 4x - 1$

d. $y = \frac{1}{3}x + \frac{8}{3}$

Solve the system of linear equations by substitution. Check your solution.

____ 52. $3x = y - 8$

$x - 8 = y$

a. $(-16,-8)$
b. $(0,-8)$
c. $(-8,-16)$
d. $(-8,0)$

____ 53. $y - x = 0$

$7x - 9y = 8$

a. $(4,4)$
b. $(4,-4)$
c. $(-4,4)$
d. $(-4,-4)$

____ 54. $y - x = 23$

$y = 3x + 11$

a. $(3, 20)$
b. $(6, 29)$
c. $(24, 47)$
d. $(4, 27)$

Solve the system of linear equations by elimination. Check your solution.

____ 55. $x + 2y = 9$

$-x - y = -5$

a. $(1,4)$
b. $(-9,14)$
c. $(-9,-14)$
d. $(-1,4)$

____ 56. $4x - 6y = -18$

$6x - 6y = -12$

a. $(-3,5)$
b. $(3,5)$
c. $(-3,-1)$
d. $(-3,1)$

____ 57. $3x - y = 2$

$7x - 2y = 5$

a. $(3,-7)$
b. $(3,7)$
c. $(1,1)$
d. $(-1,1)$

____ 58. $x + 2y = 5$

$4x + 3y = 10$

a. $(1,2)$
b. $(-1,2)$
c. $(7,1)$
d. $(7,-1)$

Solve the system of linear equations using a graph.

____ 59. $y = 3x - 9$
$y = 3 - x$

a. (6, 9)
b. (2, 1)
c. (5, 6)
d. (3, 0)

____ 60. $y = -x - 4$
$y = \frac{1}{2}x + 5$

a. (4, –8)
b. (–6, 2)
c. $(7, 8\frac{1}{2})$
d. (4, 7)

____ 61. $y = 5x + 8$
$y = \frac{1}{2}x - 1$

a. (4, 1)
b. (–2, –2)
c. $(1, -\frac{1}{2})$
d. (2, 18)

____ 62. Which ordered pair is a solution to the system of linear equations below?
$y = \frac{1}{4}x + 2$

$y = x - 1$

a. (–4, 1)
b. (3, 4)
c. (4, 3)
d. (6, 4)

____ 63. For what values of k should you solve the system by elimination?
$2x - y = -8$

$kx + 3y = 6$

a. ±2
b. ±8
c. ±3
d. ±6

____ 64. Which point appears on the graph of the function below?
$y = 2x + 3$

a. (0, 0)
b. (0, 3)
c. (3, 0)
d. (–3, 0)

Semester 2 Final Cumulative Review (2020-2021)
Answer Section

MULTIPLE CHOICE

1. B
2. B
3. B
4. D
5. A
6. D
7. B
8. B
9. D
10. A
11. B
12. D
13. D
14. B
15. D
16. D
17. A
18. A
19. C
20. C
21. C
22. A
23. D
24. A
25. D
26. B
27. B
28. B
29. C
30. A
31. C
32. A
33. C
34. D
35. B
36. C
37. D
38. B
39. D

40. C
41. D
42. C
43. C
44. B
45. B
46. C
47. B
48. B
49. C
50. A
51. B
52. C
53. D
54. B
55. A
56. B
57. C
58. A
59. D
60. B
61. B
62. C
63. A
64. B