

Semester 1 Final Exam Review

Exercises 1-6 are multiple choice. Please circle the letter of the best answer.

1. What is the exponent in the expression $2xy^3$?

- (a) 3 (b) x (c) 2 (d) y

2. What is the coefficient in the expression $2xy^3$?

- (a) 3 (b) x (c) 2 (d) y

3. Simplify: $-7a + 5b + 13a - 10b$

- (a) $6a - 5b$ (b) $2a + 4b$ (c) $-6a + 4b$ (d) $-6a - 6b$

4. Simplify: $6x + 5y + 2 + 7x - 10y + 3$

- (a) $13x + 15y + 5$ (b) $13x - 5y + 5$ (c) $x + 5y - 5$ (d) $x - 5y - 5$

5. Simplify: $0.5(6x + 2y) + 3(3x + 2y)$

- (a) $-6x + 5y$ (b) $12x + 7y$ (c) $-12x - 5y$ (d) $-6x - 5y$

6. Simplify: $-5(2x + 4y) - \frac{1}{2}(6x + 2y)$

- (a) $13x + 21y$ (b) $-7x + 20y$ (c) $-13x + 19y$ (d) $-13x - 21y$

For exercises 7-14, simplify each expression.

7. $-3x + 2x - 6x + 5x$

8. $5x - 3y - 2x - 2y$

9. $6A - 3B - 6A - 2B$

10. $4x^2 - 3x - 5x^2$

11. $8(x - 5)$

12. $-5x(4x - 2)$

13. $-3(3x - 8y) - \frac{2}{3}(9x - 3y)$

14. $-4(3x - 2) - (x + 5)$

Exercises 15-19 are multiple choice. Please circle the letter of the best answer.

15. Evaluate: $-|3 - 8| + |-5|$

- (a) 10 (b) -5 (c) 0 (d) -10

16. Evaluate: $(-5)(-2) + (-3)(-8)$

- (a) 34 (b) -34 (c) 14 (d) -14

17. Simplify: $-0.5(8x - 4y) + 3(3x - 2y)$

(a) $13x - 8y$

(b) $-5x + 4y$

(c) $-5x - 4y$

(d) $5x - 4y$

18. Solve: $-3(x - 4) = -x - 5 - 9x$

(a) $x = \frac{17}{7}$

(b) $x = -\frac{17}{7}$

(c) $x = \frac{7}{17}$

(d) $x = -\frac{7}{17}$

19. Simplify: $\frac{7}{2}x + 1 = \frac{1}{4}x - 1$

(a) $x = \frac{7}{2}$

(b) $x = \frac{8}{13}$

(c) $x = -\frac{8}{13}$

(d) $x = -\frac{2}{7}$

For exercises 20 - 34, simplify each expression and solve each equation. Remember to show your work.

20. $\frac{3}{2}x = 12$

21. $0.5(6x - 2) = 3(3x - 2)$

22. $3(x - 5) = -15$

23. $2(x + 3) - 3(x - 1)$

24. $-3x = 5x - 4$

25. $-3 + 4x = -20$

26. $2x + 4 + 6(x - 8)$

27. $4(3x + 2) = 18x - 14$

28. $-3x - 1 + 5(x + 8)$

29. $-5(2x - 4) = \frac{1}{2}(6x + 2)$

30. $\frac{1}{2}w = -10 + \frac{2}{3}w$

31. $2(x - 3) - 5x + 1$

32. $\frac{1}{20} - x = \frac{17}{6}$

33. $x - \frac{1}{20} = \frac{17}{6}x$

34. $6p - (5p + 8) - 5 - 2(p + 12)$

Exercises 35-45 are multiple choice. Please circle the letter of the best answer.

35. Solve for w : $V = lwh$

(a) $w = \frac{V}{lh}$

(b) $w = V - lh$

(c) $w = V - l - h$

(d) $w = \frac{V}{l} - h$

36. Solve for y : $2x + 3y = 11$

(a) $y = -\frac{11}{2}x - \frac{2}{3}$

(b) $y = -\frac{2}{3}x + \frac{11}{3}$

(c) $y = -2x + 8$

(d) $y = \frac{2}{3}x + \frac{11}{3}$

37. The ratio of As to Bs in the class is 2 to 5. If there are 14 As, how many Bs are in the class?

(a) 20 Bs

(b) 12 Bs

(c) 140 Bs

(d) 35 Bs

38. The ratio of Wii fans to Xbox fans is 7 to 4. If there are 32 Xbox fans, how many Wii fans are there?

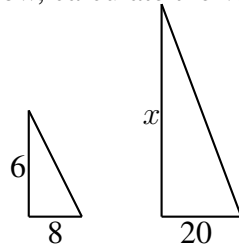
(a) 56 Wii fans

(b) 11 Wii fans

(c) 43 Wii fans

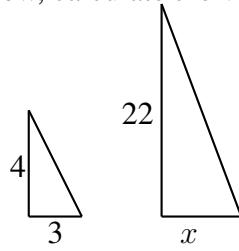
(d) 28 Wii fans

39. Given the similar triangles in the figure below, calculate the value of x :



- (a) $x = 20$ (b) $x = 18$ (c) $x = 15$ (d) $x = 10$

40. Given the similar triangles in the figure below, calculate the value of x :



- (a) $x = \frac{17}{2}$ (b) $x = \frac{33}{2}$ (c) $x = 3$ (d) $x = 21$

41. One hundred fifty (150) Beaverton High students were interviewed to determine which nearby school was Beaverton’s fiercest rival. The results of the survey are shown in the table below. If there are 2000 students at Beaverton High School, what is the expected number of students who think Southridge is Beaverton’s fiercest rival?

Rivalry Survey

Jesuit	Southridge	Aloha
77	63	10

- (a) 1000 students (b) 840 students (c) 1160 students (d) 630 students

42. Which inequality is graphed below?



- (a) $x \geq 2$ (b) $x \leq 2$ (c) $x < 2$ (d) $x > 2$

43. Which graph matches the inequality $x \geq -4$?

- (a) (b) (c) (d)

44. Solve the inequality: $3x - 2 \geq 6$

(a) $x \geq \frac{8}{3}$

(b) $x \leq \frac{8}{3}$

(c) $x \geq 5$

(d) $x \leq 5$

45. Solve the inequality: $-5x \leq 10$

(a) $x \leq -2$

(b) $x \geq -2$

(c) $x \leq 2$

(d) $x \geq 2$

For exercises 46 and 47, solve each equation for the requested variable. Remember to show your work.

46. Solve for A: $AB + 3C = D$

47. Solve for D: $LM - D = E$

For exercises 48-52, solve each equation for y. Remember to show your work.

48. $10x + 5y = -20$

49. $3x - 2y = 6$

50. $-x - 3y = 6$

51. $2x + 3y = -9$

52. $2x + 3y + 9 = 5x - y + 10$

For exercises 53-56, solve each proportion. Remember to show your work.

53. $\frac{8}{2} = \frac{x+3}{x+1}$

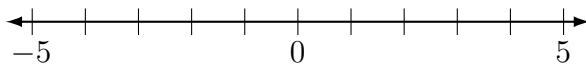
54. $\frac{4}{x} = -\frac{5}{30}$

55. $\frac{4}{3} = \frac{x+4}{x}$

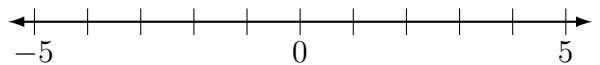
56. $\frac{3}{x} = -\frac{1}{20}$

For exercises 57 and 58, solve each inequality and graph your solution. Remember to show your work.

57. $5x - 2 \leq 13$



58. $2x - 3 \geq 4x + 7$



Exercises 59-70 are multiple choice. Please circle the letter of the best answer.

59. Solve for y: $2x + y = 3$

(a) $y = -2x - 3$

(b) $y = 2x - 3$

(c) $y = -2x + 3$

(d) $y = 2x + 3$

60. Solve for y: $3x - 4y = 10$

(a) $y = \frac{3}{4}x + \frac{5}{2}$

(b) $y = \frac{3}{4}x - \frac{5}{2}$

(c) $y = -\frac{3}{4}x + \frac{5}{2}$

(d) $y = -\frac{3}{4}x - \frac{5}{2}$

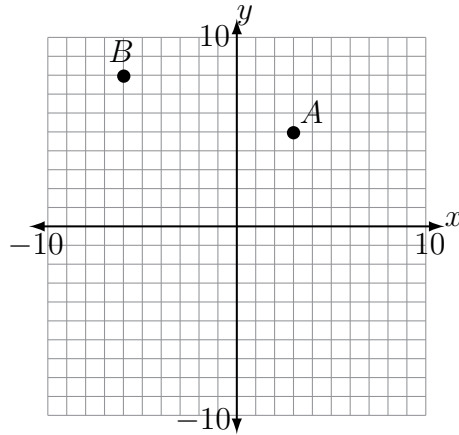
61. In the graph below, what are the coordinates of point A ?

(a) $(3, 5)$

(b) $(-3, 5)$

(c) $(3, -5)$

(d) $(-3, -5)$



62. In the graph above, what are the coordinates of point B ?

(a) $(-6, 8)$

(b) $(-6, -8)$

(c) $(6, 8)$

(d) $(6, -8)$

63. In the table below, what is the value of C ?

(a) -2

(b) -14

(c) 14

(d) 2

$$y = 3x - 8$$

x	y
-2	C
2	-2
7	D

64. In the table above, what is the value of D ?

(a) 13

(b) 2

(c) -2

(d) 29

65. Which of the following ordered pairs does represent a point on the graph of the equation $y = \frac{5}{2}x - 3$?

(a) $(3, 18)$

(b) $(5, -1)$

(c) $(3, 8)$

(d) $(4, 7)$

66. Which of the following ordered pairs does not represent a point on the graph of the equation $y = \frac{5}{2}x - 3$?

(a) $(6, 12)$

(b) $(4, 17)$

(c) $(0, -3)$

(d) $(-2, -8)$

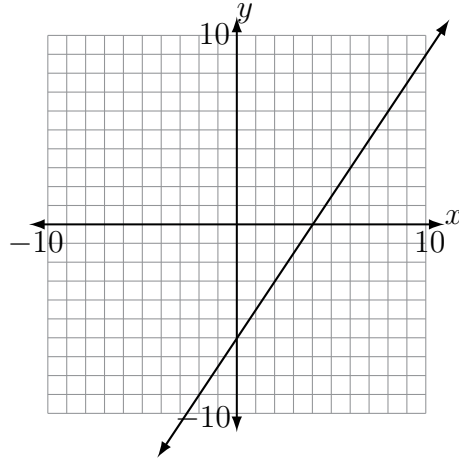
67. In the graph below, what is the y -intercept?

(a) $(0, -6)$

(b) $(0, 6)$

(c) $(-6, 0)$

(d) $(6, 0)$



68. In the graph above, what is the slope?

(a) $-\frac{3}{2}$

(b) $\frac{3}{2}$

(c) $-\frac{2}{3}$

(d) $\frac{2}{3}$

69. What is the y -intercept of the graph of $y = -3x + 2$?

(a) $(0, -3)$

(b) $(-3, 0)$

(c) $(2, 0)$

(d) $(0, 2)$

70. What is the slope of the graph of $3x + 2y = 8$?

(a) $-\frac{3}{2}$

(b) $\frac{3}{2}$

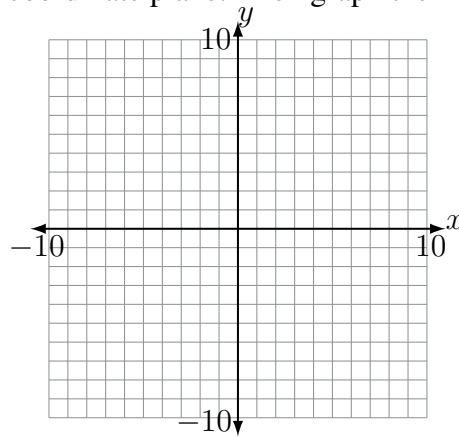
(c) $\frac{2}{3}$

(d) $-\frac{2}{3}$

71. Complete the table and graph the points in the given coordinate plane. Then graph the line.

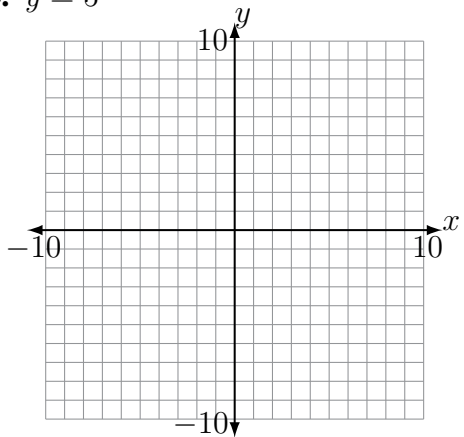
$$y = \frac{2}{3}x - 5$$

x	y
-9	
-6	
-3	
0	
3	
6	
9	

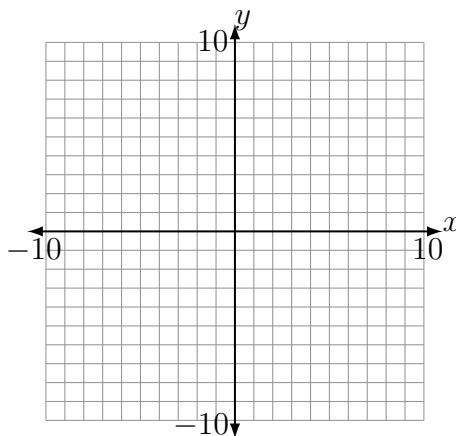


For exercises 74 and 75, graph each line.

74. $y = 5$

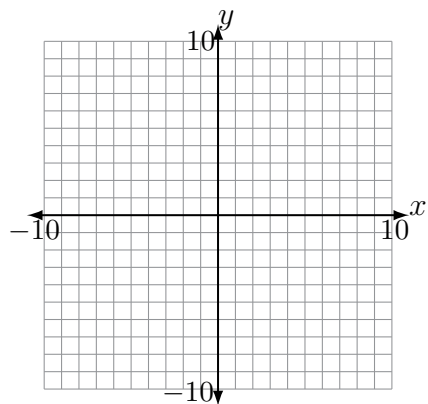


75. $x = -9$

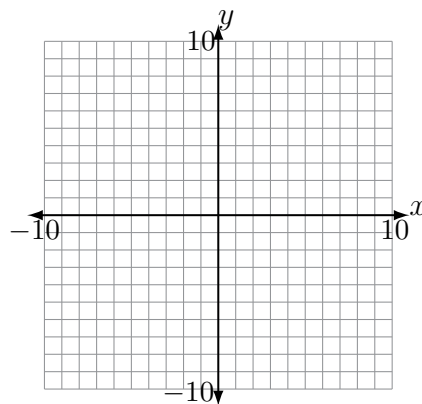


For exercises 76 and 77, write each equation in slope-intercept form. Then graph the equation.

76. $x + y = 3$



77. $2x - 3y = 6$



For exercises 78-80, calculate the slope of the line that connects each pair of points.

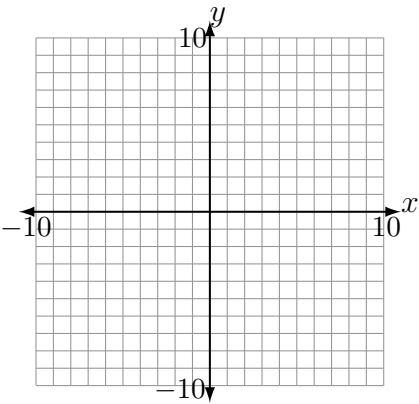
78. $(3, 5)$ and $(-1, 9)$

79. $(7, 5)$ and $(10, 5)$

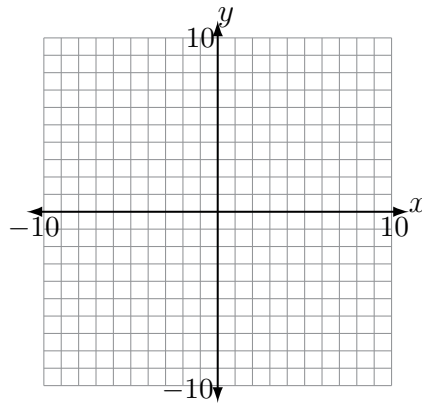
80. $(4, 12)$ and $(19, -6)$

For exercises 81-83, write each equation in slope-intercept form. Then graph the line.

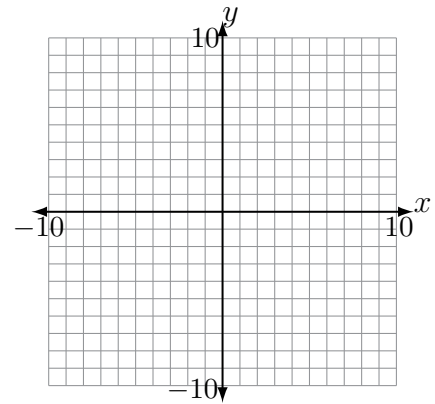
81. $4x + 6y = -6$



82. $8x - 8y = -24$



83. $y = 9$



For exercises 84-88, use the given information to write the equation in slope-intercept form.

84.

x	-1	-2	-3	-4	-5
y	-4	3	10	17	24

85. passes through
(3, 2) and (0, 6)

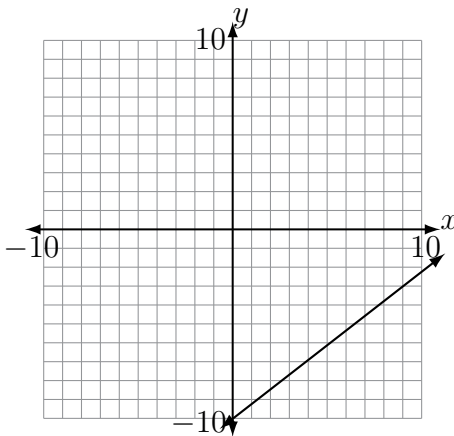
86. slope: -6
 y -intercept: (0, 9)

87. passes through
(3, -3) and (-1 , 6)

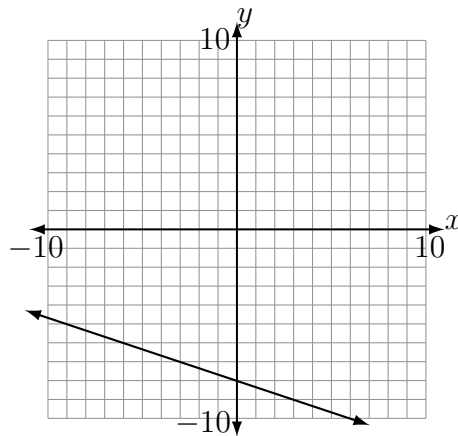
88. slope: 0
 y -intercept: (0, -9)

For exercises 89 and 90, write the equation of each graph in slope-intercept form.

89.

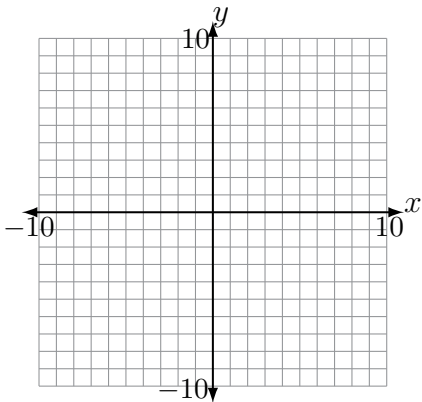


90.

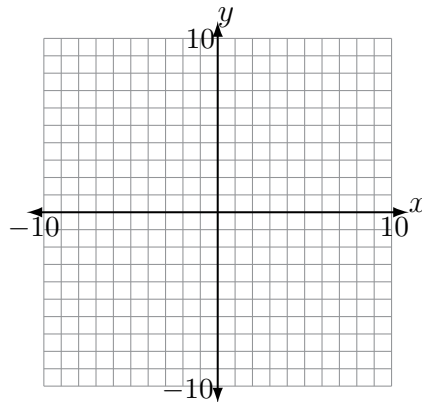


For exercises 91-93, write each equation in slope-intercept form, graph the line (or dashed line), and shade the appropriate region.

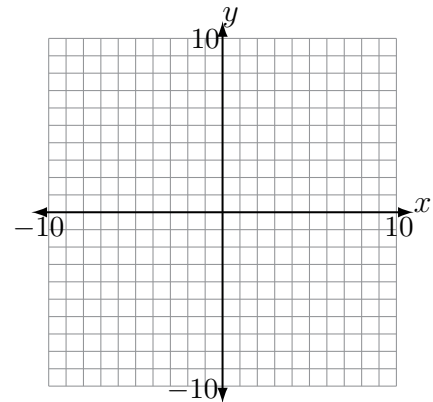
91. $y > -3x + 7$



92. $-3x - 10y \leq 70$

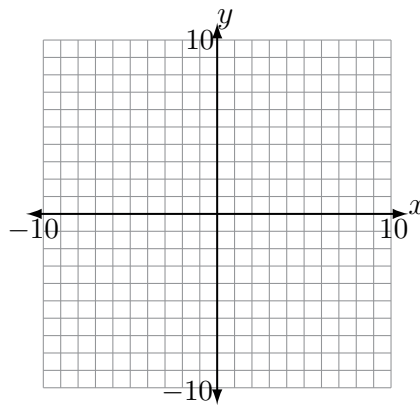


93. $-4x + 4y \leq 36$



94. Write the equation in slope-intercept form, graph the line (or dashed line), and shade the appropriate region. Then state whether each given point is a solution to the inequality.

$$2x - 10y < 90$$



Test these points:

(a) $(0, 0)$

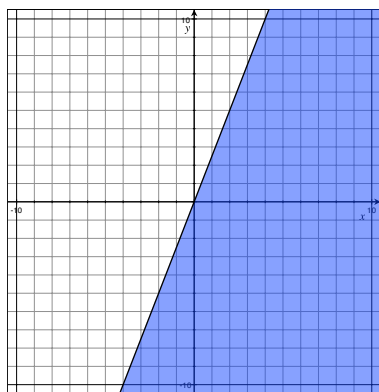
(b) $(9, -2)$

(c) $(-3, -4)$

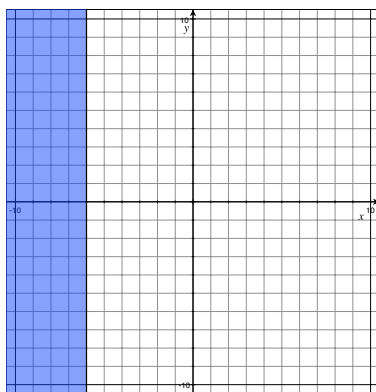
(d) $(10, -7)$

For exercises 95-97, write the equation or inequality of each graph in slope-intercept form.

95.



96.



97.

