

Algebra Spring Break Packet

Optional work -- show all your work on separate paper. The more of these you get right, the more extra credit points you get. The total possible bonus hasn't yet been decided.

1. Evaluate the expression for the given value of the variable.

$$11x - 5.6 \text{ when } x = 3$$

2. Andrea Wirtzfeld's cousin is 11 years younger than Andrea. Write an expression for the age of Andrea's cousin.

3. Use a calculator to evaluate the power.

$$3^2$$

4. Evaluate the expression for the given value of the variable.

$$x^3 \text{ when } x = 5$$

5. Evaluate the expression.

$$5 \cdot 3^2 - 9$$

6. Use a calculator to simplify the expression.

$$9 \cdot 0.9 + 3^2 - 1.2 + 2.3 \cdot 2$$

7. Solve the equation.

$$30 = m - 4$$

8. Your bank balance is \$643.97. If you write a check to buy a pair of shoes, your balance would be \$619.52. How much do the shoes cost? Write a linear equation that models the problem.

9. A 15-foot pole extends x feet below ground and 6 feet above ground. Write a linear equation that models the situation.

Solve the equation.

10. $25 = 5y$

11. $\frac{7}{8}x = 112$

12. $4x + 5 = 21$

13. $-4n + 14 + 2n = 26$

14. $\frac{3}{16}y + 24 = 0$

Solve the equation.

15. $3x + 2 = x + 6$

16. $x + 3 = -2x + 2$

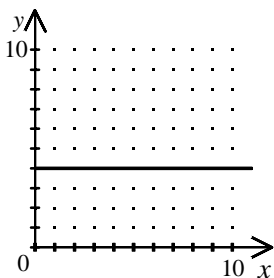
17. $3(a + 7) = [a - (10 - a)]$

18. Complete the table. Then graph the equation.

x	-4	-2	0	2	4
$y = -\frac{5}{8}x - 3$					

19. Graph the equation.
 $y = -1$

20. Write the equation for this graph.

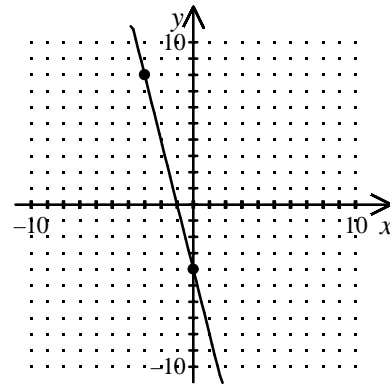


21. Find the y -intercept of the line $5x + 4y = 20$.

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

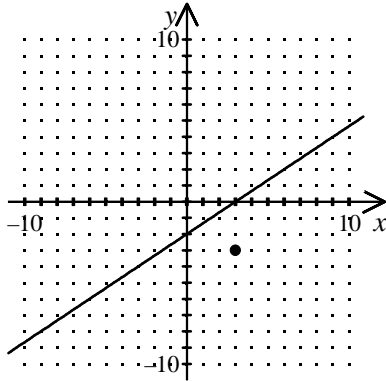
23. Find the slope of the line passing through the points $A(5, 8)$ and $B(-1, 3)$.

24. Write an equation of the line shown in slope-intercept form.



25. Write an equation in point-slope form of the line. Then rewrite the equation in slope-intercept form. The line that passes through the point $(-7, -2)$ and has the slope $\frac{3}{5}$.

26. Write in slope-intercept form the equation of the line that is parallel to the line in the graph and passes through the given point.



27. The Robertsons find that they have used $\frac{1}{2}$ gallon of paint to cover 540 square feet of wall. They used $\frac{3}{4}$ gallon of paint to cover 810 square feet of wall. Write an equation to find the number of gallons of paint they will need, G , in order to cover s square feet of wall.

28. Write the equation of the line in standard form. Use integer coefficients.

$$y = -2x - \frac{9}{4}$$

29. Write the standard form of the equation of the line with slope -1 passing through the point $(3, 4)$.

30. Graph the inequality.
 $x \geq -6$

31. Solve $x + 7 \geq 9$.

Use $<$, $>$, \leq , or \geq to make an inequality equivalent to the one given.

32. If $x > 8$, then $2x$ 16 .

33. $x < 6$
 $3x$ 18

34. Solve and graph the inequality.
 $4x + 1 \leq 2(x - 3)$

35. In order to collect a salary bonus, Tony Jones must get at least 240 hits this season. In the second to last week of the season, Tony started with 220 hits and got 16 more. Write an inequality that describes how many hits Tony must get in the season's last week.

Solve the inequality.

36. $-6 \leq 2x + 6 \leq 4$

37. $x + 3 \leq 7$ and $-4x < 8$

38. Write a compound inequality that represents the set of all real numbers less than -7 or greater than or equal to -6 .

39. Solve the inequality.
 $3x - 6 > 9$ or $2x - 6 < 10$

Solve the absolute-value equation.

40. $|x| = 1$

41. $3 = |5 + 2x|$

42. Find the solution to the system by graphing. Use a straight edge to draw straight lines.

$$\begin{aligned}x + y &= 7 \\ 2x - y &= -1\end{aligned}$$

Use substitution to solve the linear system.

43. $y = x + 6$
 $y = 2x$

44. $3x + 2y = -15$
 $y = -3x - 12$

45. Solve by linear combinations.

$$4x + y = 16$$

$$x - y = 4$$

46. A jumbo jet carries 340 passengers, 36 in first class, and the remainder in coach. If the average first class ticket is \$750 and the average coach ticket is \$388, how much will the airline gross if the plane is full?

47. Solve the equation or write *no real solution*.

$$x^2 = -100$$

Simplify the expression.

48. $\sqrt{32}$

49. $4\sqrt{200}$

50. Rationalize the denominator.

$$\sqrt{\frac{2}{3}}$$

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Optional work -- show all your work on separate paper. The more of these you get right, the more extra credit points you get. The total possible bonus hasn't yet been decided.

1. Evaluate the expression for the given value of the variable.

$$7.7x - 10.7 \text{ when } x = 5$$

2. Winston Marsh's brother is 13 years older than Winston. Write an expression for the age of Winston's brother.

3. Use a calculator to evaluate the power.

$$3^3$$

4. Evaluate the expression for the given value of the variable.

$$x^3 \text{ when } x = 9$$

5. Evaluate the expression.

$$3 \cdot 2^2 - 2$$

6. Use a calculator to simplify the expression.

$$24 \cdot 0.6 + 2^3 - 3.2 + 3.7 \cdot 3$$

7. Solve the equation.

$$21 = m + 2$$

8. Your bank balance is \$824.30. If you write a check to buy a pair of shoes, your balance would be \$796.80. How much do the shoes cost? Write a linear equation that models the problem.

9. A 13-foot pole extends x feet below ground and 5 feet above ground. Write a linear equation that models the situation.

Solve the equation.

10. $14 = 7y$

11. $\frac{4}{3}x = 48$

12. $6x + 7 = 49$

13. $-10n + 10 + 8n = 18$

14. $\frac{2}{14}y - 12 = 0$

Solve the equation.

15. $2x + 6 = x + 4$

16. $x + 5 = -x + 9$

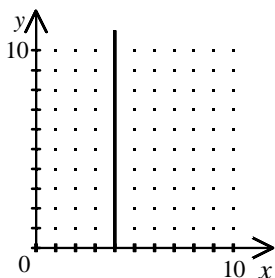
17. $10(a + 9) = 2[a - (3 - a)]$

18. Complete the table. Then graph the equation.

x	-4	-2	0	2	4
$y = \frac{7}{8}x - 2$					

19. Graph the equation.
 $x = 4$

20. Write the equation for this graph.

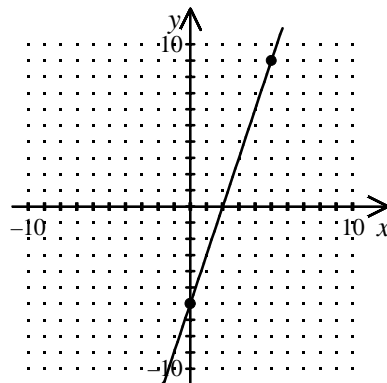


21. Find the x -intercept of the line $3x - 4y = -12$.

22. Find the x - and y -intercepts of $y = 5x - 5$.

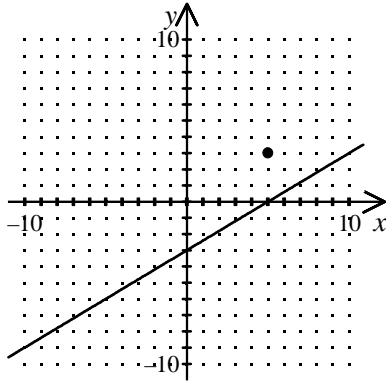
23. Find the slope of the line passing through the points $A(-6, 5)$ and $B(-5, -4)$.

24. Write an equation of the line shown in slope-intercept form.



25. Write an equation in point-slope form of the line. Then rewrite the equation in slope-intercept form. The line that passes through the point $(-9, 6)$ and has the slope $\frac{1}{3}$.

26. Write in slope-intercept form the equation of the line that is parallel to the line in the graph and passes through the given point.



27. The Robertsons find that they have used $\frac{1}{2}$ gallon of paint to cover 520 square feet of wall. They used $\frac{3}{4}$ gallon of paint to cover 780 square feet of wall. Write an equation to find the number of gallons of paint they will need, G , in order to cover s square feet of wall.

28. Write the equation of the line in standard form. Use integer coefficients.

$$y = \frac{9}{7}x + \frac{2}{7}$$

29. Write the standard form of the equation of the line with slope 2 passing through the point (2, 1).

30. Graph the inequality.
 $x \geq -2$

31. Solve $x + 10 \geq 12$.

Use $<$, $>$, \leq , or \geq to make an inequality equivalent to the one given.

32. If $x > -1$, then $-3x \bigcirc 3$.

33. $x > 1$
 $-4x \bigcirc -4$

34. Solve and graph the inequality.
 $4x - 5 \leq 2(x - 3)$

35. In order to collect a salary bonus, Tony Jones must get at least 280 hits this season. In the second to last week of the season, Tony started with 252 hits and got 23 more. Write an inequality that describes how many hits Tony must get in the season's last week.

Solve the inequality.

36. $-15 \leq -3x + 15 \leq 9$

37. $x + 2 \leq 6$ and $-3x < 9$

38. Write a compound inequality that represents the set of all real numbers less than 5 or greater than or equal to 14.

39. Solve the inequality.
 $2x - 2 > -8$ or $3x - 7 < -10$

Solve the absolute-value equation.

40. $|x| = 5$

41. $6 = |1 + 6x|$

42. Find the solution to the system by graphing. Use a straight edge to draw straight lines.
 $x + y = -2$
 $2x - y = -1$

Use substitution to solve the linear system.

43. $y = 4x - 1$
 $y = 5x$

44. $3x + 4y = -32$
 $y = 3x + 7$

45. Solve by linear combinations.

$$2x + 5y = -29$$

$$x - 5y = 23$$

46. A jumbo jet carries 280 passengers, 34 in first class, and the remainder in coach. If the average first class ticket is \$940 and the average coach ticket is \$254, how much will the airline gross if the plane is full?

47. Solve the equation or write *no real solution*.

$$x^2 = 121$$

Simplify the expression.

48. $\sqrt{27}$

49. $-3\sqrt{1875}$

50. Rationalize the denominator.

$$\sqrt{\frac{3}{7}}$$

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Optional work -- show all your work on separate paper. The more of these you get right, the more extra credit points you get. The total possible bonus hasn't yet been decided.

1. Evaluate the expression for the given value of the variable.

$$5.7x - 8 \text{ when } x = 4$$

2. Jeremy Zeleke's sister is 12 years older than Jeremy. Write an expression for the age of Jeremy's sister.

3. Use a calculator to evaluate the power.

$$2^4$$

4. Evaluate the expression for the given value of the variable.

$$x^3 \text{ when } x = 6$$

5. Evaluate the expression.

$$6 \cdot 4^2 - 7$$

6. Use a calculator to simplify the expression.

$$128 \cdot 0.4 + 4^3 - 1.7 + 4.6 \cdot 4$$

7. Solve the equation.

$$24 = m + 7$$

8. Your bank balance is \$837.54. If you write a check to buy a pair of shoes, your balance would be \$814.87. How much do the shoes cost? Write a linear equation that models the problem.

9. A 19-foot pole extends x feet below ground and 18 feet above ground. Write a linear equation that models the situation.

Solve the equation.

10. $81 = 9y$

11. $\frac{5}{6}x = 90$

12. $7x + 9 = 23$

13. $-5n + 16 + 7n = 34$

14. $\frac{4}{18}y + 20 = 0$

Solve the equation.

15. $4x + 8 = x + 2$

16. $x + 4 = -5x + 3$

17. $5(a + 1) = 7[a - (9 - a)]$

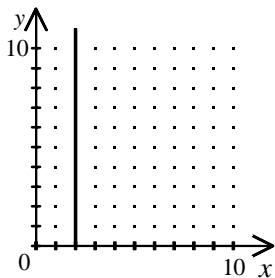
18. Complete the table. Then graph the equation.

x	-4	-2	0	2	4
$y = -\frac{3}{8}x + 4$					

19. Graph the equation.

$$x = -7$$

20. Write the equation for this graph.

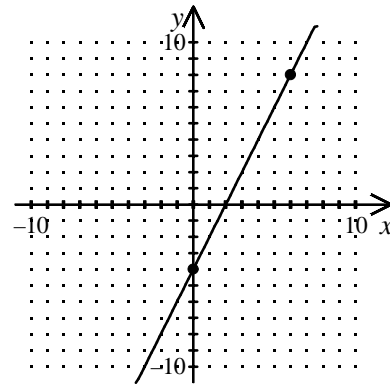


21. Find the x -intercept of the line $3x + 2y = 6$.

22. Find the x - and y -intercepts of $y = -8x + 8$.

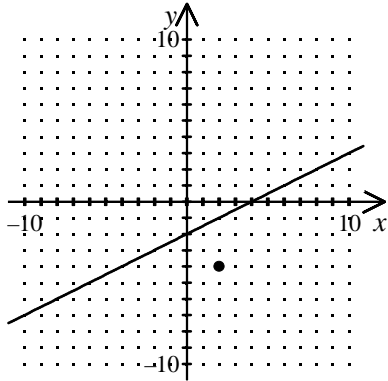
23. Find the slope of the line passing through the points $A(-2, -3)$ and $B(4, 5)$.

24. Write an equation of the line shown in slope-intercept form.



25. Write an equation in point-slope form of the line. Then rewrite the equation in slope-intercept form. The line that passes through the point $(-5, -4)$ and has the slope $\frac{1}{4}$.

26. Write in slope-intercept form the equation of the line that is parallel to the line in the graph and passes through the given point.



27. The Robertsons find that they have used $\frac{1}{2}$ gallon of paint to cover 510 square feet of wall. They used $\frac{3}{4}$ gallon of paint to cover 765 square feet of wall. Write an equation to find the number of gallons of paint they will need, G , in order to cover s square feet of wall.

28. Write the equation of the line in standard form. Use integer coefficients.

$$y = \frac{5}{8}x + \frac{3}{8}$$

29. Write the standard form of the equation of the line with slope 4 passing through the point $(-5, 3)$.

30. Graph the inequality.
 $x \geq 6$

31. Solve $x + 4 > 7$.

Use $<$, $>$, \leq , or \geq to make an inequality equivalent to the one given.

32. If $x > 7$, then $-2x \bigcirc -14$.

33. $x < -1$
 $-4x \bigcirc 4$

34. Solve and graph the inequality.
 $4x + 3 \geq 2(x - 2)$

35. In order to collect a salary bonus, Tony Jones must get at least 300 hits this season. In the second to last week of the season, Tony started with 286 hits and got 5 more. Write an inequality that describes how many hits Tony must get in the season's last week.

Solve the inequality.

36. $-12 \leq -3x + 6 \leq 12$

37. $x + 1 \leq 5$ and $-2x < 10$

38. Write a compound inequality that represents the set of all real numbers less than or equal to 3 or greater than 6.

39. Solve the inequality.
 $2x - 4 > -12$ or $3x - 3 < -3$

Solve the absolute-value equation.

40. $|x| = 2$

41. $5 = |3 + 4x|$

42. Find the solution to the system by graphing. Use a straight edge to draw straight lines.

$$x + y = 3$$

$$2x - y = -6$$

Use substitution to solve the linear system.

43. $y = 2x + 3$
 $y = 3x$

44. $x - 4y = -9$
 $y = -x - 4$

45. Solve by linear combinations.

$$2x - 5y = 1$$

$$3x + 5y = 14$$

46. A jumbo jet carries 380 passengers, 32 in first class, and the remainder in coach. If the average first class ticket is \$910 and the average coach ticket is \$317, how much will the airline gross if the plane is full?

47. Solve the equation or write *no real solution*.

$$x^2 = -81$$

Simplify the expression.

48. $\sqrt{245}$

49. $-2\sqrt{162}$

50. Rationalize the denominator.

$$\sqrt{\frac{11}{10}}$$

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Optional work -- show all your work on separate paper. The more of these you get right, the more extra credit points you get. The total possible bonus hasn't yet been decided.

1. Evaluate the expression for the given value of the variable.

$$11.9x - 7.3 \text{ when } x = 7$$

2. Rosa Menendez's brother is 15 years younger than Rosa. Write an expression for the age of Rosa's brother.

3. Use a calculator to evaluate the power.

$$2^2$$

4. Evaluate the expression for the given value of the variable.

$$x^3 \text{ when } x = 4$$

5. Evaluate the expression.

$$7 \cdot 5^2 - 6$$

6. Use a calculator to simplify the expression.

$$32 \cdot 0.1 + 4^2 - 2 + 2.5 \cdot 3$$

7. Solve the equation.

$$16 = m - 3$$

8. Your bank balance is \$646.20. If you write a check to buy a pair of shoes, your balance would be \$620.36. How much do the shoes cost? Write a linear equation that models the problem.

9. A 20-foot pole extends x feet below ground and 7 feet above ground. Write a linear equation that models the situation.

Solve the equation.

10. $24 = 6y$

11. $\frac{3}{7}x = 21$

12. $5x + 6 = 46$

13. $6n + 26 - 4n = 54$

14. $\frac{7}{15}y + 28 = 0$

Solve the equation.

15. $6x + 1 = x - 3$

16. $x + 1 = -4x + 8$

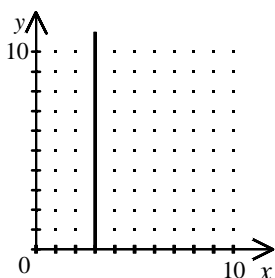
17. $7(a + 8) = 5[a - (6 - a)]$

18. Complete the table. Then graph the equation.

x	-3	-2	0	2	3
$y = -\frac{5}{6}x + 1$					

19. Graph the equation.
 $y = 5$

20. Write the equation for this graph.

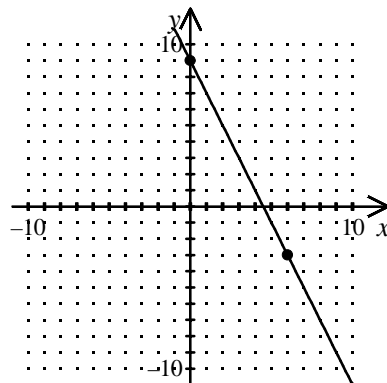


21. Find the y -intercept of the line $4x - y = -4$.

22. Find the x - and y -intercepts of $y = 2x + 6$.

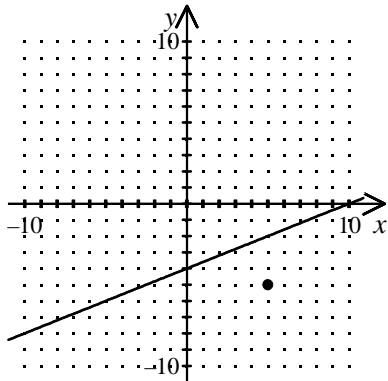
23. Find the slope of the line passing through the points $A(4, -2)$ and $B(7, 8)$.

24. Write an equation of the line shown in slope-intercept form.



25. Write an equation in point-slope form of the line. Then rewrite the equation in slope-intercept form. The line that passes through the point $(-1, 8)$ and has the slope $\frac{1}{2}$.

26. Write in slope-intercept form the equation of the line that is parallel to the line in the graph and passes through the given point.



27. The Robertsons find that they have used $\frac{1}{2}$ gallon of paint to cover 460 square feet of wall. They used $\frac{3}{4}$ gallon of paint to cover 690 square feet of wall. Write an equation to find the number of gallons of paint they will need, G , in order to cover s square feet of wall.

28. Write the equation of the line in standard form. Use integer coefficients.

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

29. Write the standard form of the equation of the line with slope 3 passing through the point $(-1, -7)$.

30. Graph the inequality.
 $x \geq 1$

31. Solve $x + 3 > 7$.

Use $<$, $>$, \leq , or \geq to make an inequality equivalent to the one given.

32. If $x > 2$, then $5x \bigcirc 10$.

33. $x < 6$
 $-3x \bigcirc -18$

34. Solve and graph the inequality.
 $4x - 1 \leq 2(x - 2)$

35. In order to collect a salary bonus, Tony Jones must get at least 270 hits this season. In the second to last week of the season, Tony started with 242 hits and got 22 more. Write an inequality that describes how many hits Tony must get in the season's last week.

Solve the inequality.

36. $-8 \leq 2x + 4 \leq 10$

37. $x - 1 \leq 3$ and $-x < 4$

38. Write a compound inequality that represents the set of all real numbers less than or equal to -10 or greater than 3 .

39. Solve the inequality.
 $3x - 5 > -11$ or $2x + 5 < 11$

Solve the absolute-value equation.

40. $|x| = 13$

41. $4 = |6 + 3x|$

42. Find the solution to the system by graphing. Use a straight edge to draw straight lines.
 $x + y = -5$
 $3x - y = 1$

Use substitution to solve the linear system.

43. $y = 3x + 5$
 $y = 4x$

44. $x - 2y = -5$
 $y = x + 2$

45. Solve by linear combinations.

$$4x - y = 5$$

$$3x + y = 9$$

46. A jumbo jet carries 330 passengers, 26 in first class, and the remainder in coach. If the average first class ticket is \$630 and the average coach ticket is \$207, how much will the airline gross if the plane is full?

47. Solve the equation or write *no real solution*.

$$x^2 = -100$$

Simplify the expression.

48. $\sqrt{252}$

49. $4\sqrt{200}$

50. Rationalize the denominator.

$$\sqrt{\frac{5}{11}}$$