

Student: _____
Date: _____

Instructor: Imelda Valencia
Course: 2016-2017 Algebra 1

Assignment: Summer Homework for those who will be taking Geometry (MS and HS) Sy 2017-2018) available only until September 15.

1. Solve the equation. Check your solution.

$$5x + 4x - 7 = 20$$

x = _____ (Simplify your answer.)

2. Solve the equation. Check your answer.

$$1.5 = 3.1 - 0.2x$$

x = _____

3. Solve the equation. Check your answer.

$$12 = 8x + 3 - 5x$$

x = _____ (Simplify your answer.)

4. Solve the equation. Check your answer.

$$b - 1 + 2b = 24$$

b = _____ (Simplify your answer.)

5. Solve the equation. Check your answer.

$$28 = 9x + 4 - 5x$$

x = _____ (Simplify your answer.)

6. Solve the equation.

$$8(3x - 2) = 56$$

x = _____ (Simplify your answer.)

7. Solve the equation. Check your answer.

$$-4(r + 5) = -49$$

r = _____ (Simplify your answer. Type an integer or a fraction.)

8. Solve the equation. Choose the method you prefer to use. Check your answer.

$$\frac{b}{11} - \frac{3b}{11} = \frac{12}{11}$$

b = _____ (Simplify your answer.)

9. Solve the equation below. Choose the method you prefer to use. Check your answer.

$$\frac{n}{6} - \frac{5n}{12} = \frac{1}{6}$$

n = _____ (Type an integer or a simplified fraction.)

10. Solve the equation. Choose the method you prefer to use. Check your answer.

$$\frac{5}{3} + \frac{3m}{4} = \frac{35}{12}$$

m = _____ (Simplify your answer.)

11. Solve the equation. Choose the method you prefer to use. Check your answer.

$$\frac{b}{8} + \frac{1}{3} = 17$$

b = _____ (Simplify your answer.)

12. Solve the equation. Check your answer.

$$1.38g - 4 = 0.83$$

g = _____ (Simplify your answer.)

13. Solve the equation. Check your answer.

$$22.71 = 4g + 3.83$$

g = _____ (Simplify your answer.)

14. Solve the equation.

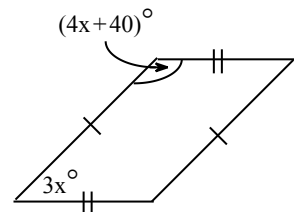
$$8n - (5n + 6) = 15$$

n = _____ (Simplify your answer.)

15. Angie and Kenny play online video games. Angie buys 1 software package and 2 months of game play. Kenny buys 1 software package and 6 months of game play. Each software package costs \$30. If their total cost is \$164, what is the cost of one month of game play?

The cost of one month of game play is \$ _____. (Type an integer or a decimal.)

16. Find the value of x. (Hint: The sum of the angle measures of a quadrilateral is 360° .)



x = _____ (Simplify your answer.)

17. You have \$55 in your bank account. Each week you plan to deposit \$7 from your allowance and \$25 from your paycheck. The equation $b = 55 + (25 + 7)w$ gives the amount b in your account after w weeks. How many weeks from now will you have \$210 in your bank account?

There will be \$210 in the account after _____ weeks.
(Type a whole number.)

18. Solve.

$$7x + 11 = 3x - 5$$

$x =$ _____
(Simplify your answer. Type an integer or a fraction.)

19. A truck can be rented from Company A for \$120 a day plus \$0.20 per mile. Company B charges \$40 a day plus \$0.30 per mile to rent the same truck. Find the number of miles in a day at which the rental costs for Company A and Company B are the same.

At _____ miles, the rental costs are the same from either company.

20. Solve.

$$8x - 9 = 12 + 11x$$

The solution is $x =$ _____.
(Simplify your answer. Type an integer or a fraction.)

21. Solve the equation. Check your solution.

$$9 + 8q = 12 + 7q$$

$q =$ _____

22. Solve the equation. Check your solution.

$$9y - 3 = 19 - 2y$$

$y =$ _____

23. Solve the equation.

$$13x - 7 = 3 + 11x$$

$x =$ _____

24. Solve the equation. Check your solution.

$$-4y + 6 = 23y - 3$$

$y =$ _____ (Type an integer or a simplified fraction.)

25. Solve the equation. Check your answer.

$$8(x - 5) = 7(x + 5)$$

$x =$ _____
(Type an integer or a simplified fraction.)

26. Solve the equation. Check your solution.

$$4g + 4(-7 + 3g) = 1 - g$$

$g =$ _____ (Type an integer or a simplified fraction.)

27. Determine whether the equation is an identity or whether it has no solution.

$$2(a - 3) = 4a - (2a + 6)$$

The equation (1) _____ .

- (1) is an identity
 has no solution

28. Determine whether the equation below is an identity or whether it has no solution.

$$3(5x - 25) = 15(x - 25)$$

Choose the correct answer below.

- The equation has no solution.
 The equation is an identity.

29. Determine whether the equation below is an identity or whether it has no solution.

$$-3(6x + 7) = -18x + 21$$

Choose the correct answer below.

- The equation has no solution.
 The equation is an identity.

30. Solve the equation. Note if the equation is an identity or if it has no solution.

$$-2(-c - 16) = -2c - 16$$

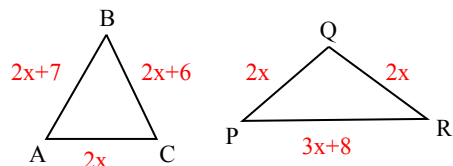
Select the correct choice and fill in any answer boxes in your choice below.

- A. $c =$ _____
 B. The equation is an identity.
 C. The equation has no solution.

31. A skier is trying to decide whether or not to buy a season ski pass. A daily pass costs \$67. A season ski pass costs \$300. The skier would have to rent skis with either pass for \$20 per day. How many days would the skier have to go skiing in order to make the season pass less expensive than the daily passes?

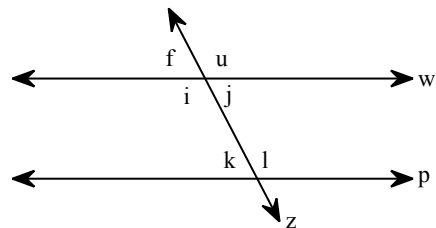
The skier would have to go skiing _____ days.
(Type a whole number.)

32. The perimeters of the triangles shown are equal. Find the side lengths of each triangle.



$\overline{AB} =$ _____ $\overline{PQ} =$ _____
 $\overline{BC} =$ _____ $\overline{QR} =$ _____
 $\overline{AC} =$ _____ $\overline{PR} =$ _____
 (Type a whole number.)

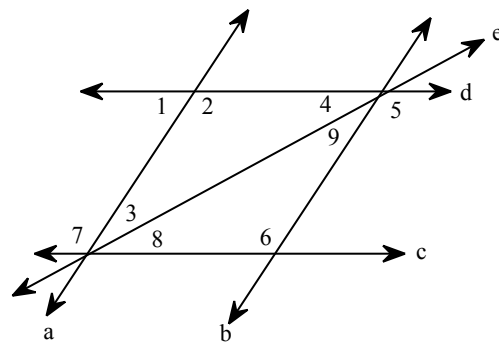
*33. In the figure, $w \parallel p$. Which angles are alternate interior angles?



Choose the correct answer below. Select all that apply.

- A. $\angle i$ and $\angle f$
- B. $\angle j$ and $\angle u$
- C. $\angle i$ and $\angle l$
- D. $\angle j$ and $\angle k$
- E. $\angle u$ and $\angle i$
- F. $\angle u$ and $\angle f$

*34. Identify a pair of corresponding angles in the diagram.

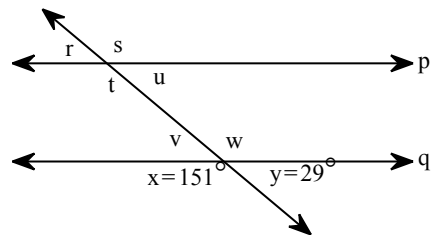


Which of the following is a pair of corresponding angles?

- A. $\angle 6$ and $\angle 8$
- B. $\angle 2$ and $\angle 5$
- C. $\angle 1$ and $\angle 4$
- D. $\angle 1$ and $\angle 7$

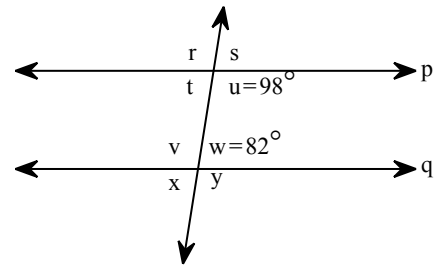
*35.

Find the measure of $\angle t$ given that $p \parallel q$.



$m\angle t =$ _____ $^\circ$

*36. Find the measure of $\angle v$ given that $p \parallel q$.



$m\angle v =$ _____ $^\circ$

37. Solve the inequality. Check your solutions.

$$7w + 2 > 30$$

The solution is w (1) _____ .
(Simplify your answer.)

- (1) \geq
 $<$
 $>$
 \leq

38. Solve for x .

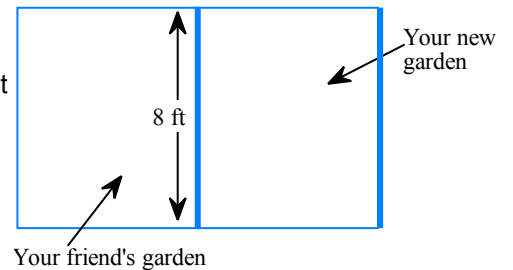
$$4(x - 5) - 5x \geq -1$$

The solution is x _____ .
(Simplify your answer. Type an inequality symbol, then type an integer.)

39. What are the solutions of $6x + 11 > 3x - 4$?

$x >$ _____ .
(Simplify your answer.)

40. In a community garden (shown to the right) you want to plant and fence in a vegetable garden that is adjacent to your friend's garden. You have at most 40 ft of fence, and the fence must surround all four sides of your garden. What are the possible lengths of your garden?



The possible lengths of the garden are (1) _____ feet.
(Simplify your answer.)

- (1) at most
 at least
 less than
 greater than

41. Solve the inequality. Check your solutions.

$$3f + 4 > 13$$

The solution is $f(1)$ _____ .
(Simplify your answer.)

- (1) $>$
 $<$
 \leq
 \geq
-

42. Solve the inequality.

$$-12 - 6x \leq 0$$

The solution is $x(1)$ _____ .

- (1) $<$
 $>$
 \leq
 \geq
-

43. Solve the inequality. Check your solution.

$$3 \geq -12 + 5y$$

The solution is $y(1)$ _____ .
(Simplify your answer.)

- (1) \leq
 $<$
 $>$
 \geq
-

44. Solve the inequality.

$$3(x - 5) + 8x \geq -4$$

The solution is $x(1)$ _____ .
(Simplify your answer.)

- (1) \geq
 $<$
 $>$
 \leq
-

45. Solve the inequality.

$$-2(x + 3) + 6x < -14$$

The solution is x (1) _____ .
(Simplify your answer.)

- (1) \leq
 $<$
 \geq
 $>$

46. Solve for x .

$$4(x - 1) - 5x \geq -2$$

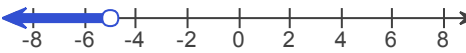


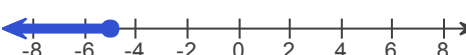
The solution is x _____ .
(Simplify your answer. Type an inequality symbol, then type an integer.)

47. Solve for x .
Graph the solution.

$$4x + 1 < 3x - 4$$

The solution is $x <$ _____ .

Which is the correct graph?


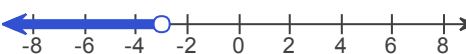
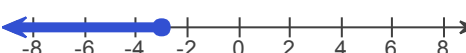
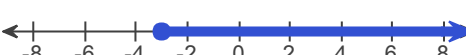
- A. 
- B. 
- C. 
- D. 

48. Solve for x .
Graph the solution.

$$5x + 1 < 4x - 2$$

The solution is $x <$ _____ .

Which is the correct graph?

- A. 
- B. 
- C. 
- D. 



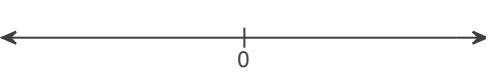

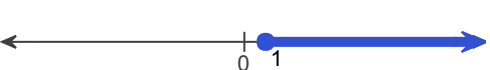
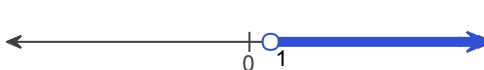
49. Solve the inequality, and graph the solution on a number line.

$$4x - 4 \leq 4(x - 1)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____.
(Type an inequality. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

Choose the correct graph of the solution.

- A. 
- B. 
- C. 
- D. 
- E. 
- F. 

50. Solve the inequality, if possible.

$$2(3 + x) \geq 14 - 3x$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____.
(Type an inequality. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

51. Your cell phone plan costs \$24.99 per month plus \$0.18 for each text message you send or receive. You have at most \$29 to spend on your cell phone bill. What is the maximum number of text messages that you can send or receive next month?

The maximum number of text messages is _____.

52. Find the theoretical probability of the event when rolling a 12-sided die.

$$P(10)$$

$P(10) =$ _____
(Type an integer or a simplified fraction.)

53. Find the theoretical probability of the event when rolling a 12-sided die.

$$P(\text{less than } 12)$$

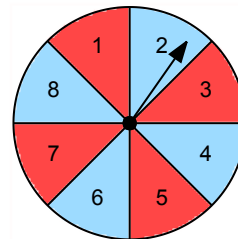
$P(\text{less than } 12) =$ _____
(Type an integer or a simplified fraction.)

54. What are the odds in favor of rolling a 3 on an eight-sided die?

The odds in favor of the event are _____ : _____. (Simplify your answer.)

55. The spinner at the right is divided into eight equal parts. Find the theoretical probability of landing on the given section(s) of the spinner.

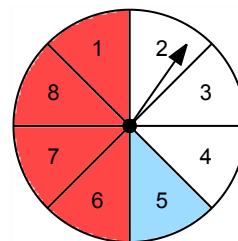
$P(\text{greater than 4})$



$P(\text{greater than 4}) =$ _____ (Simplify your answer.)

56. The spinner at the right is divided into eight equal parts. Find the theoretical probability of landing on the given section(s) of the spinner.

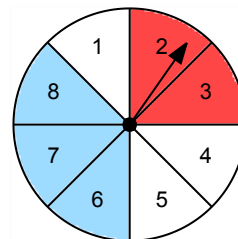
$P(\text{white})$



$P(\text{white}) =$ _____ (Simplify your answer.)

57. The spinner at the right is divided into eight equal parts. Find the theoretical probability of landing on the given section(s) of the spinner.

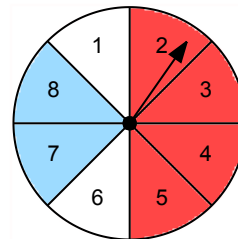
$P(\text{greater than 5})$



$P(\text{greater than 5}) =$ _____ (Simplify your answer.)

58. The spinner at the right is divided into eight equal parts. Find the theoretical probability of landing on the given section(s) of the spinner.

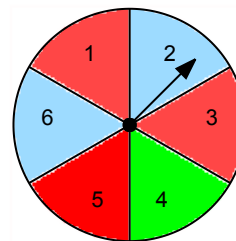
$P(\text{not red})$



$P(\text{not red}) =$ _____ (Simplify your answer.)

59. The spinner at the right is divided into six equal parts. Find the theoretical probability of landing on the given section(s) of the spinner.

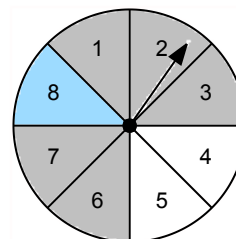
P(not greater than 3)



P(not greater than 3) = _____ (Simplify your answer.)

60. Use the spinner at the right. Find the odds.

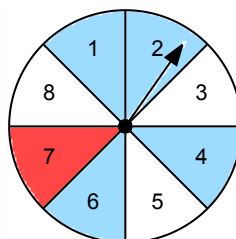
odds in favor of even number



The odds in favor of the event are _____ : _____. (Simplify your answer.)

61. Use the spinner at the right. Find the odds.

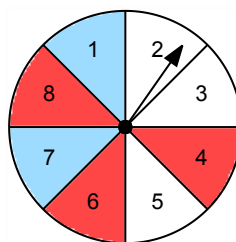
odds against 1



The odds against the event are _____ : _____. (Simplify your answer.)

62. Use the spinner at the right. Find the odds.

odds against blue

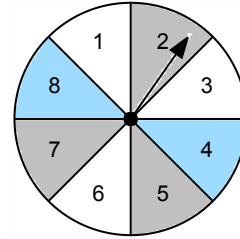


R: 3 sections
B: 2 sections
W: 3 sections

The odds against the event are _____ : _____. (Simplify your answer.)

63. Use the spinner at the right. Find the odds.

odds in favor of silver



The odds in favor of the event are _____ : _____. (Simplify your answer.)

64. The results of a survey of 100 randomly selected students at a 2000-student high school are shown at the right. Find the experimental probability that a student selected at random has the given plans after graduation.

$P(4\text{-year college})$

Response	Number of Responses
Go to community college	22
Go to a 4-year college	48
Take a year off before college	13
Go to trade school	14
Do not plan to go to college	3

$P(4\text{-year college}) =$ _____
(Type an integer or a simplified fraction.)

65. The results of a survey of 100 randomly selected students at a 2000-student high school are shown at the right. Find the experimental probability that a student selected at random has the given plans after graduation.

$P(\text{not community college})$

Response	Number of Responses
Go to community college	24
Go to a 4-year college	47
Take a year off before college	10
Go to trade school	13
Do not plan to go to college	6

$P(\text{not community college}) =$ _____
(Type an integer or a simplified fraction.)

66. Out of 160 workers surveyed at a company, 23 walk to work.

- What is the experimental probability that a randomly selected worker at that company walks to work?
- Predict about how many of the 3900 workers at the company walk to work.

a. The experimental probability is _____.
(Type an integer or a decimal.)

b. About _____ workers walk to work.
(Round to the nearest ten as needed.)

67. Out of 160 workers surveyed at a company, 23 walk to work.

- What is the experimental probability that a randomly selected worker at that company walks to work?
- Predict about how many of the 2500 workers at the company walk to work.

a. The experimental probability is _____.
(Type an integer or a decimal.)

b. About _____ workers walk to work.
(Round to the nearest ten as needed.)

- *68. Some questions allow you to choose several correct answers from a list of possible answers.

Click the square near each correct choice to fill it in. Be sure to mark all correct answers.

Which of the following mathematical statements are true? Select all that apply.

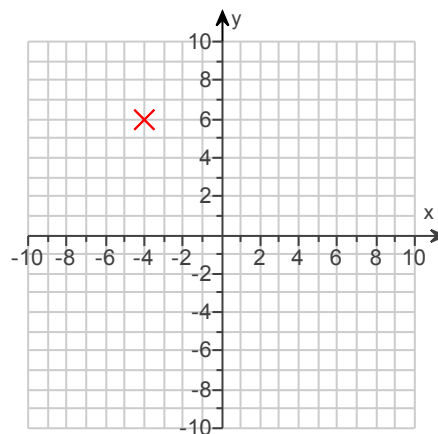
- A. $1 + 1 = 2$
- B. $1 + 2 = 2$
- C. $2 - 2 = 1$
- D. $1 \cdot 2 = 2$
- E. $1 \cdot 1 = 1$

Did you notice? Questions like the one above use a square button for each choice, and you can choose multiple answers from the list for each attempt.

- *69. Some questions make use of the **Point Plotting Tool**, which allows you to place a point at a specific location on a graph.

¹ Click the icon to view instructions for the Point Plotting Tool.

Plot the point $(-4, 6)$, located at the X, on the graph to the right.



1: Point Plotting Tool Instructions

You can use the magnifying glass in the upper right corner of the graph to enlarge the graph.

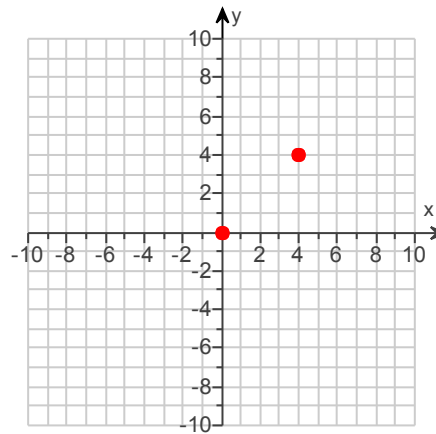
On this graph, the point is initially shown as a dot located at $(0, 0)$. To move this point to the expected location, **click and drag the point** or **click on the graph and use the arrow keys**.

For some problems, like this one, the coordinates of the point you are moving will be displayed. See that this information is displayed below the graph in this problem.


*70. Some questions make use of the **Interactive Graphing Tool**, which allows you to draw a variety of graphs.


² Click the icon to view instructions for the Interactive Graphing Tool.

Draw a dashed line using the points $(0,0)$ and $(4,4)$, which are shown on the graph, and shade the region of the graph above the dashed line.



Use the line tool button  and the dashed selector

button  on the graphing palette to draw a dashed line using the given points on the graph. Then use the region

shading tool  to place a shading bucket above the dashed line.

Did you notice? The instructions above say to use the given points when drawing the line. If you draw the line using other points, your answer will be incorrect.


2: Interactive Graphing Tool Instructions

You can use the "Click to enlarge graph" button in the lower left side of the window, or click the magnifying glass in the upper right corner of the graph to enlarge the graph. Alternatively, click the graph to activate the graphing palette and work on the graph in the problem window.

To add a line, parabola, or circle to the graph, first click the correct button in the graphing palette. Then click the locations on the graph where the control points should be placed. Notice that the coordinates of the current selected point are shown below the graph.

To update a graphed line or curve to be dashed, select the object by clicking on it, and then click the solid/dashed

selector button  located on the graph palette.

To shade a region of the graph, click the region shading button  on the graph palette to select the region shading tool. Place the shading bucket in the proper location relative to the object(s) you plotted. You only need to place one shading bucket per shaded region.

If you need to change an object on the graph, you can select it, delete it, and try again. Alternatively, you can click on any individual point and drag it to a new location, or you can click on another part of the object, and drag the entire object to a new location.

Careful: Delete any extra lines, parabolas, circles, or shaded regions from the graph before clicking "Check Answer." In order for your answer to be correct, you should graph each requested item only **one** time, and you should not have any extra items on the graph.


Always be sure to read the special graphing instructions that appear above the "Click to enlarge graph" button, explaining any special requirements the graph might have. If these instructions ask you to use specific points in your graph, you must plot these points when creating the graph, or your answer will not be counted as correct.

*71. Some questions supply a **data set**, which must be used in order to answer the question.

You can copy the data set into another program, such as a spreadsheet or a statistical software program, to perform calculations with the numbers in the given data set.


Data		
4	8	9
5	2	7
7	5	8

³ Click the icon to view instructions for copying a data set into another program.

Add the numbers in the data set either by hand or by using the copy icon  to copy the data into a program which can perform the calculation for you.

The result of adding the numbers in the given data set is _____.

3: Data Set Copying Instructions

When a data set appears in a question, there will also be an icon, usually at the top right of the data set, that can be used to copy the data into another program for calculations. To copy the data set, click the  icon near the data set. You can then choose to open the data in StatCrunch or Excel (if those options are available for your course), or you can copy the data to your clipboard using the copy data popup.

If the data does not paste into the statistical software program properly, try choosing one of the other delimiter options from the copy data popup, and then highlight and copy the data again.

Note: In some cases, the data will be copied into the other program in a different format (for example, in a single column) for ease of use.

*72. Some questions make use of the **Interactive Graphing Tool** in order to draw a parabola using two points.

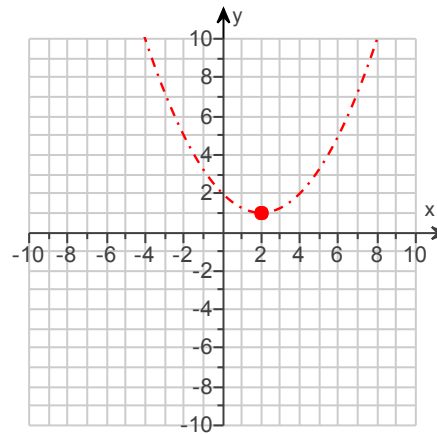
⁴ Click the icon to view instructions for the Interactive Graphing Tool.

Draw a solid vertical parabola overlaying the dashed parabola on the graph.



Use the vertical parabola tool button on the graphing palette to draw a solid vertical parabola. Place the first point at the vertex of the parabola, shown as the solid dot on the graph, and place the second point at another location on the parabola, shown as the dashed curve on the graph.

Careful: Be sure to use a second point that is exactly on the parabola, causing the dashed curve to be completely covered.



4: Interactive Graphing Tool Instructions

You can use the "Click to enlarge graph" button in the lower left side of the window, or click the magnifying glass in the upper right corner of the graph to enlarge the graph. Alternatively, click the graph to activate the graphing palette and work on the graph in the problem window.

To add a line, parabola, circle, or shaded region to the graph, first click the correct button in the graphing palette. Then click the locations on the graph where the control points should be placed. Notice that the coordinates of the current selected point are shown below the graph.

If you need to change the graph, you can select it, delete it, and try again. Alternatively, you can click on any individual point and drag it to a new location, or you can click on another part of the object, and drag the entire object to a new location.

Careful: Delete any extra lines, parabolas, circles, or shaded regions from the graph before clicking "Check Answer." In order for your answer to be correct, you should graph each requested item only **one** time, and you should not have any extra items on the graph.


Always be sure to read the special graphing instructions that appear above the "Click to enlarge graph" button, explaining any special requirements the graph might have. If these instructions ask you to use specific points in your graph, you must plot these points when creating the graph, or your answer will not be counted as correct.

- *73. Some questions make use of the **Interactive Graphing Tool** in order to draw a circle using two points.

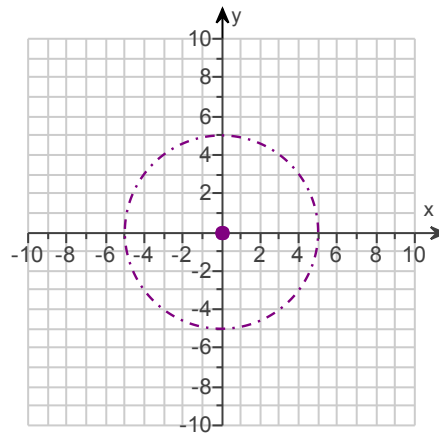
⁵ Click the icon to view instructions for the Interactive Graphing Tool.

Draw a solid circle overlaying the dashed circle on the graph.



Use the circle tool button  on the graphing palette to draw a solid circle. Place the first point at the center of the circle, shown as the solid dot on the graph, and place the second point on the circle, shown as a dashed curve on the graph.

Careful: Be sure to use a second point that is exactly on the graph of the circle.



5: Interactive Graphing Tool Instructions

You can use the "Click to enlarge graph" button in the lower left side of the window, or click the magnifying glass in the upper right corner of the graph to enlarge the graph. Alternatively, click the graph to activate the graphing palette and work on the graph in the problem window.

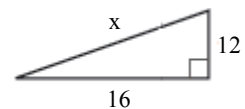
To add a line, parabola, circle, or shaded region to the graph, first click the correct button in the graphing palette. Then click the locations on the graph where the control points should be placed. Notice that the coordinates of the current selected point are shown below the graph.

If you need to change the graph, you can select it, delete it, and try again. Alternatively, you can click on any individual point and drag it to a new location, or you can click on another part of the object, and drag the entire object to a new location.

Careful: Delete any extra lines, parabolas, circles, or shaded regions from the graph before clicking "Check Answer." In order for your answer to be correct, you should graph each requested item only **one** time, and you should not have any extra items on the graph.

Always be sure to read the special graphing instructions that appear above the "Click to enlarge graph" button, explaining any special requirements the graph might have. If these instructions ask you to use specific points in your graph, you must plot these points when creating the graph, or your answer will not be counted as correct.

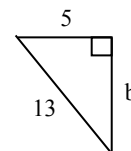
- *74. What is the value of x in simplest radical form?



$x =$ _____

(Simplify your answer. Type an exact answer, using radicals as needed.)

- *75. Find the length of the third side of the right triangle.



The length of the third side is _____.

(Simplify your answer.)

1. 3

2. 8

3. 3

4. $\frac{25}{3}$

5. 6

6. 3

7. $\frac{29}{4}$

8. -6

9. $-\frac{2}{3}$

10. $\frac{5}{3}$

11. $\frac{400}{3}$

12. 3.5

13. 4.72

14. 7

15. 13

16. 20

17. 5

18. -4

19. 800

20. -7

21. 3

22. 2

23. 5

24. $\frac{1}{3}$

25. 75

26. $\frac{29}{17}$

27. (1) is an identity

28. The equation has no solution.

29. The equation has no solution.

30. A. $c = \underline{\quad -12 \quad}$

31. 5

32. 17

10

16

10

10

23

33. C. $\angle i$ and $\angle l$, D. $\angle j$ and $\angle k$

34. B. $\angle 2$ and $\angle 5$

35. 151

36. 98

37. (1) >

4

38. \leq

- 19

39. - 5

40. (1) at most

12

41. (1) >

3

42. (1) \geq

- 2

43. (1) \leq

3

44. (1) \geq

1

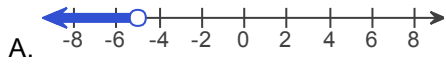
45. (1) <

- 2

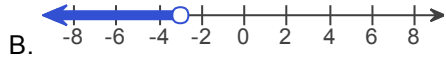
46. \leq

- 2

47. -5



48. -3



49. B. The solution is all real numbers.



50. A. The solution is $x \geq \frac{8}{5}$. (Type an inequality. Simplify your answer.)

51. 22

52. $\frac{1}{12}$

53. $\frac{11}{12}$

54. $\frac{1}{7}$

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

56. $\frac{3}{8}$

57. $\frac{3}{8}$

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

$$59. \frac{1}{2}$$

$$60. 1$$

$$61. 7$$

$$62. 3$$

$$63. 3$$

$$64. \frac{12}{25}$$

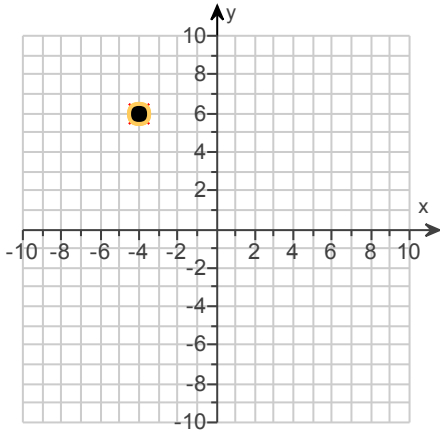
$$65. \frac{19}{25}$$

$$66. 0.14375$$

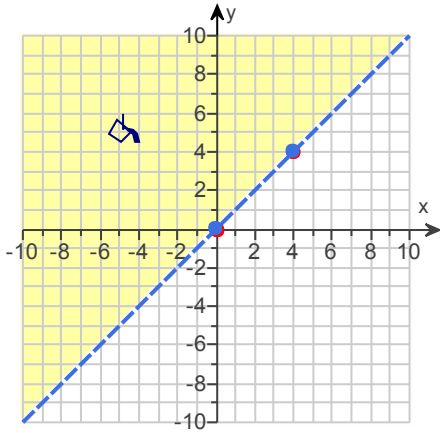
$$67. 0.14375$$

$$68. A. 1 + 1 = 2, D. 1 \cdot 2 = 2, E. 1 \cdot 1 = 1$$

69.

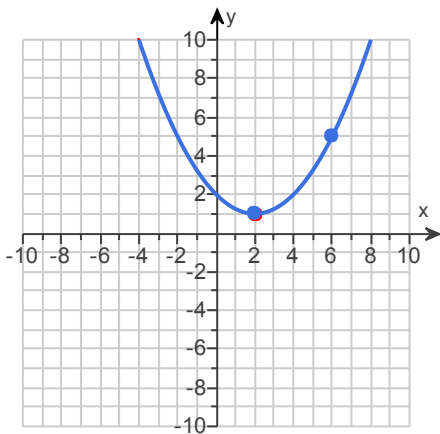


70.

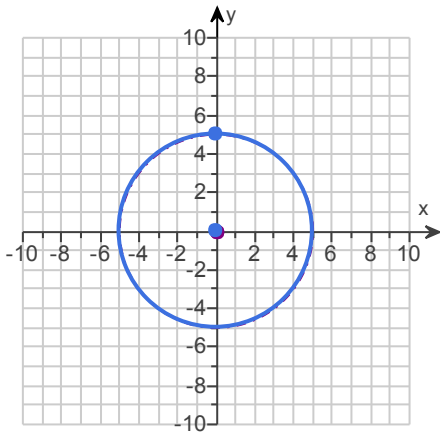


71. 55

72.



73.



74. 20

75. 12
