

Graph the given ellipse. Identify the domain, range, center, vertices, endpoints of the figure.

$$\frac{(x+1)^2}{9} + \frac{(y-5)^2}{4} = 1$$

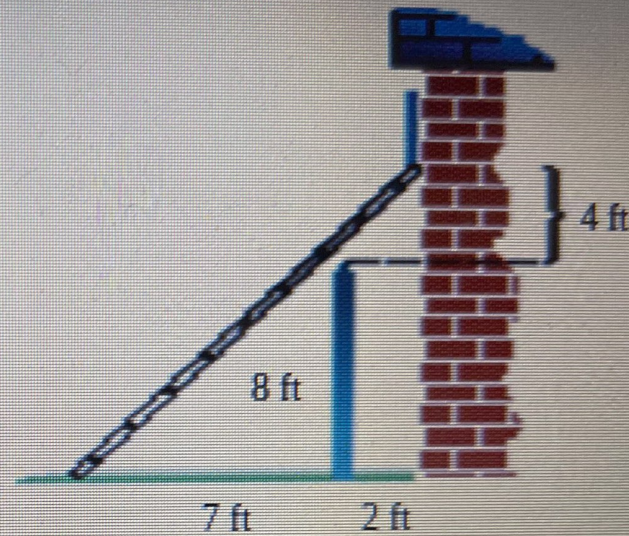
The center of the ellipse is .  
(Type an ordered pair.)

The vertices are .  
(Type ordered pairs. Use a comma to separate answers as needed.)

The endpoints of the minor axis are .  
(Type ordered pairs. Use a comma to separate answers as needed.)

The foci of the ellipse are .  
(Type ordered pairs. Type exact answers, using radicals as needed. Use a comma to separate answers as needed.)

A building is 2 ft from an 8-ft fence that surrounds the property. A worker wants to wash a window in the building 12 ft from the ground. He plans to place a ladder over the fence so it rests against the building. (See the figure.) He decides he should place the ladder 7 ft from the fence for stability. To the nearest tenth of a foot, how long a ladder will he need?



He will need a  ft ladder.

(Type an integer or decimal rounded to the nearest tenth as needed.)

Use synthetic division to decide whether the given number  $k$  is a zero of the polynomial function. If it is not, give the value of  $f(k)$ .

$$f(x) = x^2 - 7x + 12; k = 3$$

Is 3 a zero of the function? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The given  $k$  is not a zero of the polynomial function.  $f(3) = \square$ .
- B. The given  $k$  is a zero of the polynomial function.

Click to select and enter your answer(s).



Find the value.

$$\log 343 + \log 21$$

If 8 g of a radioactive substance are present initially and 3 yr later only 4 g remain, how much of the substance will be present after 7 yr?

After 7 yr there will be  g of a radioactive substance.

(Round the final answer to three decimal places as needed. Round all intermediate values to seven decimal places as needed.)

Find three numbers whose sum is 32, if the first number is three times the difference between the second and the third, and the second number is two more than twice the third. Solve the problem using matrices.

The first number is , the second is  and the third is .

(Type an integer or a fraction.)

Which one of the following is a description of the graph of the inequality  $(x - 1)^2 + (y - 5)^2 < 9$ ?

- A. the region inside a circle with center  $(1, 5)$  and radius 3
- B. the region outside a circle with center  $(-5, 1)$  and radius 3
- C. the region inside a circle with center  $(-5, -1)$  and radius 9
- D. the region inside a circle with center  $(1, 5)$  and radius 9

The answer is  A.

Solve the system by using the inverse of the coefficient matrix.

$$-x + y = 1$$

$$2x - y = 2$$

What is the inverse of the coefficient matrix?

(Type an integer or simplified fraction for each matrix element.)

The solution set of the system is  $\{(3, 4)\}$ .

(Simplify your answer. Type an ordered pair.)