Warm Up

How many IXL questions have my students answered this year?

(I have had 69 students.)

Contest information is in Google Classroom.


Function
Junction
GRUDGE BALL

GRUDGE BALL
directions

- Each team starts with 10 "X's"
- All teams will work on every question. One team will be chosen to provide the answer.
- If you answer the question correctly you earn two points. You can add X's to your score, or erase two X's from another team. (You can erase one X from two different teams.)
- If you answer correctly you may also try to make a basket. If you make a 2-pointer you can take/add an additional two X's. If you make a 3-pointer you can take/add 3!
- If you are out of X's you are not automatically out of the game. You can get a question correct and start adding points again.

What is the greatest value of c for which the roots of the equation

$$x^2 + 4x + c = 0$$

are real?

$c = 4$

Write the following in Vertex Form:

$$y = -x^2 - 14x - 59$$

$y = -(x + 7)^2 - 10$

A firework is launched from the ground. Its height (h) in feet over time (t) in seconds is modeled by the equation:

$$h(t) = -16t^2 + 136t$$

How many seconds will it take for the firework to return to the ground?

8.5 seconds

What is the y-intercept of the function

$$f(x) = -2(x-3)^2 + 10?$$

(0, – 8)

What are the zeroes of the function $h(x) = -3(x + 4)^2 + 3$?

(– 5, 0) and (– 3, 0)

What 3 ways is the graph of $g(x) = \frac{1}{2}(x+4)^2 - 3$ transformed from the parent function $f(x) = x^2$?

- Compressed/widened
- Moved 4 units left
- Moved 3 units down

Find all values of k such that the equation

$$x^2 - kx = -4$$

would have equal roots.

$k = \pm 4$

The equation $y = x^2 – 12x + 45$ models the number of books (y) sold in a bookstore x days after an award- winning author appeared at an autograph-signing reception.

What was the first day that at least 100 copies of the book were sold?

16 days

Write the following in Vertex Form:

$$x^2 - 12x - 10 = 0$$

$$(x - 6)^2 - 46 = 0$$

What is the vertex of the function $y = 3.2(x + 4)^2 - 5.1$?

(– 4, – 5.1)

Solve the following for x:

$$x^2 = -60 + 16x$$

$x = 6$

$x = 10$

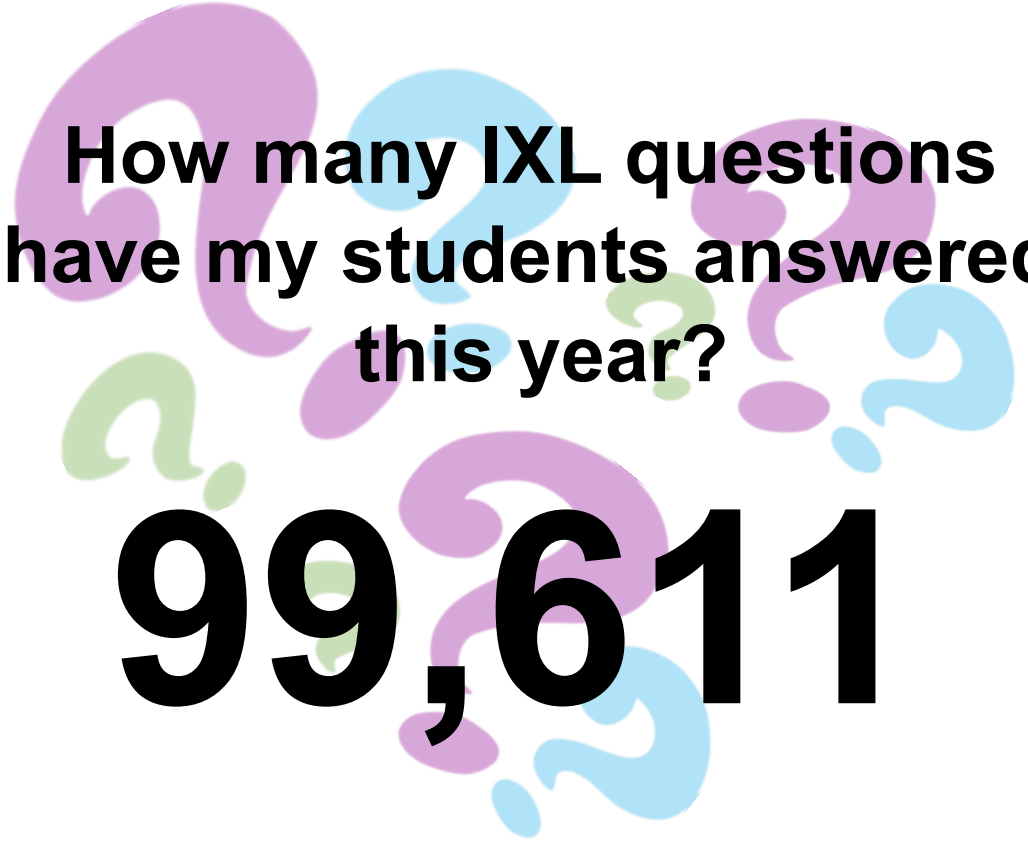
The sum of two numbers is 18,
and the product of these two numbers is 56.

What are the numbers?

4 and 14

The graph of $f(x) = x^2$ is enlarged by a factor of 4, shifted 3 units to the left and 6 units up. What is the equation after the transformation?

$$f(x) = 4(x + 3)^2 + 6$$



How many IXL questions have my students answered this year?

99,611

Congratulations

Hansen

(99360)

Find all values of k such that the equation

$$3x^2 - 2x + k = 0$$

has imaginary roots.

$$k > \frac{1}{3}$$

Write the following in Vertex Form:

$$y = x^2 - 5x + 13$$

$$y = (x - 2.5)^2 + 6.75$$

The height (ft) of a football at any given time t (sec) is modeled by the following equation:

$$h = -16t^2 + 60t + 8$$

When does it reach its maximum height?

1.875 seconds

What is the y-intercept of the function

$$y = 3.2(x + 4)^2 - 5.1?$$

(0, 46.1)

The difference of two numbers is 8, the sum of the squares of these two numbers is 320.

What are the numbers?

8 and 16

What is the vertex of:

$$x^2 + 12x = 54$$

$(-6, -90)$

Solve the following for x:

$$3x^2 - 5 = -14x$$

$$x = -5$$

$$x = \frac{1}{3}$$

How many real solutions does the equation

$$x^2 - 4x + 8 = 3$$

have?

Zero

Solve the following for x:

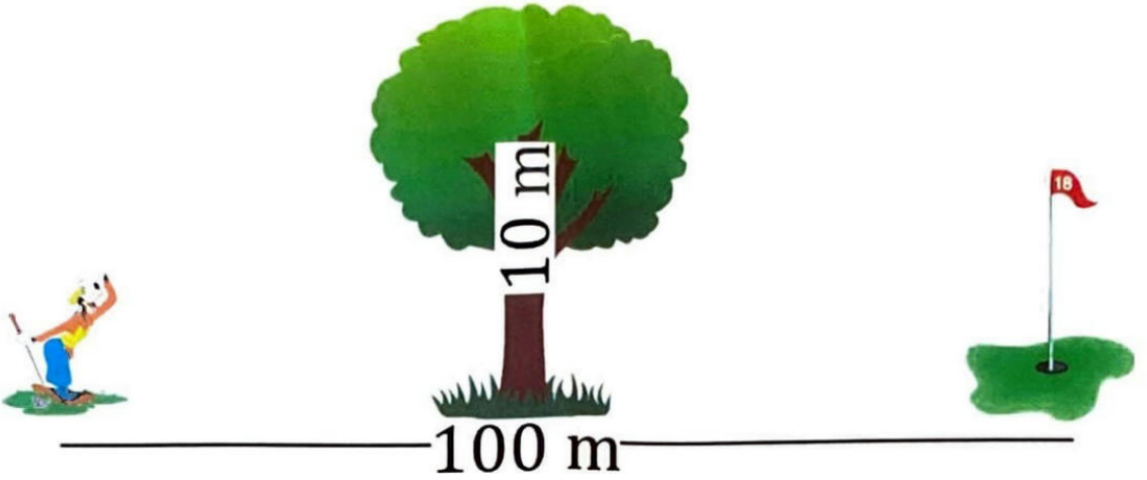
$$x^2 - 5x + 15 = 2$$

There are no
Real solutions

Write $y = (x + 3)(x - 1)$ in Vertex Form

$$y = (x + 1)^2 - 4$$

Goofy is trying to hit his golf ball to the pin. There is a 10 m tall tree exactly halfway between him and the flag. What is the height of the ball when it is 15 m from the flag?



5.1 meters

Find the vertex of:

$$f(x)=x^2+6x+8$$

(–3, –1)

Factor the polynomial $2x^3 - 8x$ completely.

$2x(x + 2)(x – 2)$

Solve the following for x:

$$7x^2 + 3x = 10$$

$x = -1.4$

$x = 1$

For what value of k are the roots of

$$2x^2 - 8x + k = 0$$

equal?

8

A skating rink manager finds that the revenue, ***R***, based on a hourly fee, ***F***, for skating is represented by the function:

$$R = -480F^2 + 3120F$$

What hourly fee will produce maximum revenues?

$6.50

Write the following in Vertex Form:

$$6x^2 + 12x + y + 13 = 0$$

$$y = -6(x + 1)^2 - 7$$

Determine the axis of symmetry for the quadratic function $y = 2x^2 + 8x + 3$.

x = – 2

Solve the following for x:

$$x^2 + 12x = 54$$

$x = -15.5$

$x = 3.5$

What function has 3 and – 3 as its roots?

$$f(x) = (x + 3)(x - 3)$$
$$= x^2 - 9$$

The height (ft) of a football at any given time t (sec) is modeled by the following equation:

$$h = -16t^2 + 60t + 8$$

How long does it take the football to reach 52 ft?

1 sec and 2.75 sec