The Square Root Property and Completing the Square

The Square Root Property

If $u^2 = d$, then $u =$ _____.

ex: If $x^2 = 7$, then $x =$ _____.

Ex 1.

Solve: $3x^2 - 11 = 0$

Ex 2.

Solve: $4x^2 + 9 = 0$

Ex 3.

Solve: $(x - 3)^2 = 10$

Completing the Square

Ex 4.

Solve by completing the square: $x^2 + 4x - 1 = 0$

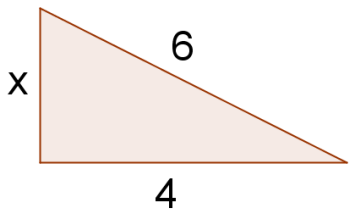
In general, to make $x^2 + bx$ a perfect square, add _____:

Ex 5.

Solve by completing the square: $2x^2 + 3x - 4 = 0$

Ex 6.

Find x, given that the following triangle is a right triangle.



Practice

1. Solve by the square root property.

a) $4x^2 + 49 = 0$

b) $\left(x + \frac{2}{5}\right)^2 = \frac{7}{25}$

2. Solve by completing the square.

$x^2 + 6x - 7 = 0$

3. Solve by completing the square. (Hint: first divide both sides by 3)
   $3x^2 - 6x + 2 = 0$

4. A rectangular park is 4 miles long and 2 miles wide. How long is a pedestrian route that runs diagonally across the park? (Hint: Draw a picture of the park, which is a rectangle.)

Q: A man leaves home and, after making three left turns, he ends up back at home, and finds two masked men waiting for him. What is happening?