

The Square Root Property and Completing the Square

The Square Root Property

If $x^2 = k$, then $x = \underline{\hspace{2cm}}$.

ex: If $x^2 = 16$, then $x = \underline{\hspace{2cm}}$.

ex: If $x^2 = 7$, then $x = \underline{\hspace{2cm}}$.

ex: What if $x^2 = -5$? Then $\underline{\hspace{4cm}}$.

Ex 1.

Solve: $5x^2 - 32 = 8$

Ex 2.

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

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.

Solve by completing the square: $4x^2 + 8x + 5 = 0$

Practice

1. Solve.

a) $3x^2 - 8 = 88$

b) $(3x - 2)^2 = 27$

2. Solve by completing the square.

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

3. Solve by completing the square. (Remember to first divide both sides by 3.)

$$3x^2 - 6x + 2 = 0$$

Q: What three letter word can prefix the following three words to make three new words? Ache, Nest, and Drum.