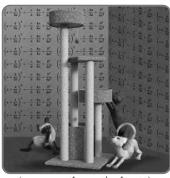
WORD PROBLEMS INVOLVING PERFECT SQUARES

Need some practice solving equations involving perfect squares first?
Solving Simple Equations involving Perfect Squares
Solving More Complicated Equations involving Perfect Squares



(more mathematical cats)

Here, you will solve word problems that result in equations involving perfect squares.

EXAMPLES:

Question: I'm thinking of a number. The square of 3 times this number is 25. What number(s) could I be thinking of?

Solution:

$$(3x)^2 = 25$$

$$3x = \pm 5$$

$$3x = 5 \text{ or } 3x = -5$$

$$x = \frac{5}{3}$$
 or $x = -\frac{5}{3}$

Question: I'm thinking of a number.

When I take one less than three times this number, and then square the result, I end up with the number 25.

What number(s) could I be thinking of?

Solution:

$$(3x-1)^2 = 25$$

$$3x - 1 = \pm 5$$

$$3x - 1 = 5$$
 or $3x - 1 = -5$

$$3x = 6 \text{ or } 3x = -4$$

$$x = 2 \text{ or } x = -\frac{4}{3}$$

Question: I'm thinking of a negative number.

When I take the sum of this number and 2, and then square the result, I end up with the number 9.

What number am I thinking of?

Solution:

$$(x+2)^2 = 9$$

$$x+2=\pm 3$$

$$x + 2 = 3$$
 or $x + 2 = -3$

$$x = 1 \text{ or } x = -5$$

Since the number being thought of is negative, the answer is -5.

Question: I'm thinking of a positive number.

When I take the difference of this number and 3, and then square the result, I end up with the number 16

What number am I thinking of?

Solution:

$$(x-3)^2 = 16$$

$$x-3=\pm 4$$

$$x-3=4 \text{ or } x-3=-4$$

$$x = 7 \text{ or } x = -1$$

Since the number being thought of is positive, the answer is 7.