

TAKS Objective 5
TEK A.10A
Tutorial
(Grades 10 and 11)

...solve quadratic equations using models, tables, graphs, and algebraic methods.

When solving quadratics, there can be two answers. In reference to TAKS there usually are two solutions.

Many times, only one of the answer choices will be given. Do not get psyched out by this. Examine all answer choices before getting concerned.

$$\text{Solve } 3(x - 4)^2 = 48.$$

Algebraic Method

$$\frac{3(x-4)^2}{3} = \frac{48}{3}$$

$$\sqrt{(x-4)^2} = \sqrt{16}$$

$$x - 4 = \pm 4$$

$$\begin{array}{r} x - 4 = 4 \quad \text{or} \quad x - 4 = -4 \\ +4 \quad +4 \qquad \qquad +4 \quad +4 \\ \hline x = 8 \quad \text{or} \quad x = 0 \end{array}$$

Other methods are available if you don't like this one.

Solve $3(x - 4)^2 = 48$.

Table Method

Put $3(x - 4)^2$ in y_1 . Put 48 in y_2 .

Then check the table for when $y_1 = y_2$.

x	y_1	y_2
-2	108	48
-1	75	48
0	48	48
1	27	48

x	y_1	y_2
6	12	48
7	27	48
8	48	48
9	75	48

Answer:
0 or 8

$$\text{Solve } 3(x - 4)^2 = 48.$$

Graph Method

Put $3(x - 4)^2$ in y_1 . Put 48 in y_2 .

Then find the intersections on the graph.

The intersection is not visible. Press ZOOM 0. If the intersection is visible, press 2nd TRACE, 5, ENTER, ENTER, ENTER. To find the other intersection, move the cursor closer to the other intersection point and repeat the steps.

Answers: 0 and 8

Note: Had the intersection not been visible, change the window, zoom 0, as needed.

If the problem involves a method you are not familiar with, solve it with a method you are familiar with and determine the answer.