Solving Quadratic Equations:

1. Solve using Square Roots
2. Solve by factoring
3. Solve using the Quadratic Formula

Solving quadratic equations: $ax^2 + bx + c = 0$

Factoring

Works some of the time.

Square Roots

Works some of the time.

(when b = 0)

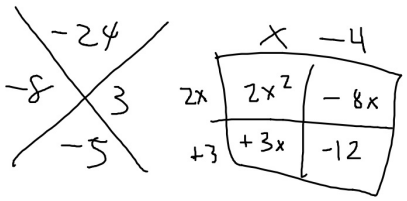
Quadratic Formula

Works ALL of the time.

Solve each Quadratic Equation using the following methods: Square Roots, Factoring, and the Quadratic Formula.
You must use each method at least once. Round to the nearest tenth when necessary.

1. $2x^2 - 5x - 12 = 0$

try factoring because the numbers are small.



$(x - 4)(2x + 3) = 0$

$x = 4, -3/2$

2. $8 - 2x^2 + 3 = 5$

Use Square Roots because b=0

$\frac{-2x^2}{-2} = \frac{-6}{-2}$

$\sqrt{x^2} = \sqrt{3}$

± 1.73

3. $14x^2 + 6x - 71 = 0$

$b^2 - 4ac = 4012$

$$x = \frac{-6 \pm \sqrt{4012}}{28}$$

$x = 2.0, -2.5$

Use Quadratic Formula because the numbers are large and it doesn't look like it will factor easily or at all.

4. $x^2 - 39x - 4176 = 0$

$b^2 - 4ac = 18{,}225$

$$x = \frac{39 \pm \sqrt{18225}}{2}$$

$x = 87, -48$

Use Quadratic Formula because the numbers are large and it doesn't look like it will factor easily or at all.