Solving Quadratic Equations

- Square Root Method
- Factoring
- Quadratic Formula
- Completing the Square
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Polka Dot Frame Shades by Mercedes Hutchens
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Instructions
Print or copy page 3 and 4 double sided.
Place the paper so the examples are face down.
Cut along the dotted lines to create flaps.
Flip and fold the flaps inwards.
Glue the foldable into notes or on a piece of construction paper.
Go through the foldable with your students.
Solving a Quadratic Equation using the...

- Square Root Method
- Factoring Method
- Quadratic Formula Method
- Completing The Square Method
Solving a Quadratic Equation using the... 

Steps:
1) Make the equation $ax^2 + bx + c$ equal to zero.
2) If $a = 1$, then find what has a product of $c$ and a sum of $b$.
3) Factor
4) Set each factor equal to zero.
5) Solve for $x$. 

Steps:
1) Isolate the $x^2$ term by itself.
2) Take the square root of both sides.
3) Isolate $x$. 

Steps:
1) Make the equation $ax^2 + bx + c$ equal to zero.
2) Find the values of $a$, $b$, and $c$.
3) Use the quadratic formula to solve for $x$.

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

1) $x^2 + 6x + 8 = 0$
2) $x^2 - 16 = 0$
3) $x^2 + 8x + 3 = 0$
4) $x^2 + 6x + 4 = 0$
Solving a Quadratic Equation using the...

- Factoring Method
- Square Root Method
- Completing The Square Method
- Quadratic Formula Method
Solving a Quadratic Equation using the…

Steps:
1) Make the equation \(ax^2 + bx + c\) equal to zero.
2) If \(a = 1\), then find what has a product of \(c\) and a sum of \(b\).
3) Factor
4) Set each factor equal to zero.
5) Solve for \(x\).

\[
1) \quad x^2 + 6x + 8 = 0
\]
\[
(x + 4)(x + 2) = 0
\]
\[
x + 4 = 0 \quad x + 2 = 0
\]
\[
-4 \quad -2
\]
\[
x = 4 \quad x = -2
\]

\[
2) \quad x^2 - 16 = 0
\]
\[
x^2 - 16 = 0
\]
\[
+16 \quad +16
\]
\[
x^2 = 16
\]
\[
\sqrt{x^2} = \sqrt{16}
\]
\[
x = \pm 4
\]

Steps:
1) Isolate the \(x^2\) term by itself.
2) Make the square root of both sides.
3) Isolate \(x\).

Steps:
1) Isolate the \(x^2\) and \(x\) terms on one side.
2) Take half the coefficient of \(x\), square it, and add it to both sides.
3) Factor & Simplify
4) Take the square root of both sides.
5) Solve for \(x\).

\[
3) \quad x^2 + 8x + 3 = 0
\]
\[
-8x
\]
\[
8x + 16 = -1
\]
\[
(x + 4)^2 = 13
\]
\[
\sqrt{(x + 4)^2} = \sqrt{13}
\]
\[
x + 4 = \pm \sqrt{13}
\]
\[
x = -4 \pm \sqrt{13}
\]

\[
4) \quad x^2 + 6x + 4 = 0
\]
\[
a = 1, \ b = 6, \ c = 4
\]
\[
x = \frac{-6 \pm \sqrt{6^2 - 4(1)(4)}}{2(1)}
\]
\[
x = \frac{-6 \pm \sqrt{36 - 16}}{2}
\]
\[
x = \frac{-6 \pm \sqrt{20}}{2}
\]
\[
x = -3 \pm \sqrt{5}
\]

Steps:
1) Make the equation \(ax^2 + bx + c\) equal to zero.
2) Find the values of \(a\), \(b\), and \(c\).
3) Use the quadratic formula to solve for \(x\).

\[
x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}
\]