

Steps for Solving Quadratics by Factoring	1)	<b>MOVE ALL TERMS</b> to the one side and set the equations <b>EQUAL TO ZERO</b> .
	2)	<b>LOOK FOR GCF!!!</b>
	3)	<b>FACTOR!!!</b> 2 Terms: GCF or DOS   3 Terms: <del>F#F</del>
	4)	<b>CHANGE SIGNS OF FACTORS FOUND!!!</b>

Examples:	
<p>1) <math>(GCF) x^2 + 9x = 0</math>  <math>x(x+9) = 0</math>  <math>x=0</math>, <math>x+9=0</math>  <span style="margin-left: 100px;">change sign</span>  <math>x=-9</math></p>	<p>2) <math>(GCF) 4x^2 - 8x = 0</math>  <math>4x(x-2) = 0</math>  <math>\frac{4x}{4} = 0</math>, <math>x-2=0</math>  <span style="margin-left: 100px;">change sign</span>  <math>x=0</math>, <math>x=2</math></p>
<p>3) <math>(DOS) x^2 - 4 = 0</math> <math>\sqrt{4}</math>  <math>(x+2)(x-2) = 0</math>  <span style="margin-left: 20px;">change signs</span>  <math>x=-2</math>, <math>x=2</math>  <span style="margin-left: 40px;">or</span>  <math>x = \pm 2</math></p>	<p>4) <math>(DOS) 9x^2 - 25 = 0</math> <math>\sqrt{25}</math>  <math>(3x+5)(3x-5) = 0</math>  <math>3x+5=0</math>, <math>3x-5=0</math>  <math>\frac{3x}{3} = \frac{-5}{3}</math>, <math>\frac{3x}{3} = \frac{5}{3}</math>  <math>x = -\frac{5}{3}</math>, <math>x = \frac{5}{3}</math>  <span style="margin-left: 40px;">or</span>  <math>x = \pm \frac{5}{3}</math></p>
<p>5) <math>x^2 - 10x + 21 = 0</math>  <math>(x-7)(x-3) = 0</math>  <span style="margin-left: 20px;">change signs</span>  <math>x=7</math>, <math>x=3</math></p>	<p>6) <math>\frac{2x^2 - 2x - 24}{2} = 0</math>  <math>x^2 - x - 12 = 0</math>  <math>(x-4)(x+3) = 0</math>  <span style="margin-left: 20px;">change signs</span>  <math>x=4</math>, <math>x=-3</math></p>
<p>7) <math>3x^2 - 13x - 30 = 0</math>  <math>(3x+5)(x-6) = 0</math>  <span style="margin-left: 20px;">change signs</span>  <math>x = -\frac{5}{3}</math>, <math>x=6</math></p>	<p>8) <math>6x^2 + 5x - 4 = 0</math>  <math>(6x-4)(x+1) = 0</math>  <span style="margin-left: 20px;">change signs</span>  <math>x = \frac{4}{3}</math>, <math>x = -\frac{1}{2}</math></p>

<p>9)</p> $\frac{2x^2 = 5x}{-5x \quad -5x}$ <p>(6cf) <math>2x^2 - 5x = 0</math></p> $x(2x - 5) = 0$ <p><math>x=0</math>      <math>2x-5=0</math>  <small>Divide      change sign</small></p> $x = \frac{5}{2}$	<p>10)</p> $\frac{7x^2 + 8x = x^2}{-x^2 \quad -x^2}$ <p>(6cf) <math>6x^2 + 8x = 0</math></p> $2x(3x + 4) = 0$ <p><math>2x=0</math>      <math>3x+4=0</math>  <small>Divide      change sign</small></p> $x=0 \quad x = -\frac{4}{3}$
<p>11)</p> $\frac{2x^2 - 50 = x^2 - 1}{-x^2 + 1 \quad -x^2 + 1}$ <p>(00s) <math>x^2 - 49 = 0</math></p> $(x+7)(x-7) = 0$ <p><small>change signs</small></p> $x = -7 \quad \text{or} \quad x = 7$ $x = \pm 7$	<p>12)</p> $\frac{3x^2 = 81 - x^2}{+x^2 \quad +x^2}$ $4x^2 = 81$ $-81 \quad -81$ <p>(00s) <math>4x^2 - 81 = 0</math>      <math>\sqrt{81}</math></p> $\sqrt{4} (2x+9)(2x-9) = 0$ $x = -\frac{9}{2} \quad x = \frac{9}{2}$ $x = \pm \frac{9}{2}$
<p>13)</p> $\frac{x^2 + 2x = 80}{-80 \quad -80}$ $x^2 + 2x - 80 = 0$ <p><math>\frac{-80}{10 \quad 2} \leftarrow</math> change signs</p> $x = -10 \quad x = 8$	<p>14)</p> $\frac{x^2 + 11x + 29 = x + 4}{-x - 4 \quad -x - 4}$ $x^2 + 10x + 25 = 0$ <p><math>\frac{25}{5 \quad 5} \leftarrow</math> change signs</p> $x = -5 \quad x = -5$ <p>or</p> $x = -5 \text{ (mult. 2)}$
<p>15)</p> $\frac{2x^2 - 9x - 65 = x^2 - x}{-x^2 + x \quad -x^2 + x}$ $x^2 - 8x - 65 = 0$ <p><math>\frac{-65}{-13 \quad 5} \leftarrow</math> change signs</p> $x = 13 \quad x = -5$	<p>16)</p> $\frac{4x^2 + 41x + 98 = 2 - 3x}{+3x - 2 \quad +3x - 2}$ $\frac{4x^2 + 44x + 96 = 0}{4 \quad 4 \quad 4}$ $x^2 + 11x + 24 = 0$ <p><math>\frac{24}{8 \quad 3} \leftarrow</math> change signs</p> $x = -8 \quad x = -3$
<p>17)</p> $\frac{2x^2 = x + 21}{-x - 21 \quad -x - 21}$ $2x^2 - x - 21 = 0$ <p><math>\frac{-42}{-7 \quad 6} \quad \frac{-7}{2} \quad \frac{3}{1}</math>  <small>Change signs</small></p> $x = \frac{7}{2} \quad x = -3$	<p>18)</p> $\frac{4x^2 - 11x = x - 9}{-x + 9 \quad -x + 9}$ $(4 \cdot 9) \quad 4x^2 - 12x + 9 = 0$ <p><math>\frac{-36}{-6 \quad -6} \leftarrow</math> reduce <math>\rightarrow \frac{-3}{2} \quad \frac{-3}{2}</math>  <small>change signs</small></p> $x = \frac{3}{2} \quad \text{or} \quad x = \frac{3}{2}$ $x = \frac{3}{2} \text{ (mult. 2)}$