

Homework #42b

Solve each quadratic equation using factoring:

<p>1) $x^2 - 3x + 2 = 0$ $(x-2)(x-1) = 0$ <table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x-2=0$ +2 +2</td> <td style="padding: 5px;">$x-1=0$ +1 +1</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x=2$</td> <td style="padding: 5px;">$x=1$</td> </tr> </table> $\{1, 2\}$</p>	$x-2=0$ +2 +2	$x-1=0$ +1 +1	$x=2$	$x=1$	<p>2) $x^2 + 3x - 4 = 50$ $-50 -50 -$ $x^2 + 3x - 54 = 0$ $(x+9)(x-6) = 0$ <table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x+9=0$ -9 -9</td> <td style="padding: 5px;">$x-6=0$ +6 +6</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">$x=-9$</td> <td style="padding: 5px;">$x=6$</td> </tr> </table> $\{-9, 6\}$</p>	$x+9=0$ -9 -9	$x-6=0$ +6 +6	$x=-9$	$x=6$	<p>3) $x^2 - 49 = 0$ $+49 +49$ $\sqrt{x^2} = \sqrt{49}$ OR $x+7=0$ OR $x-7=0$ $x = -7$ OR $x = 7$ $\{-7, 7\}$</p>
$x-2=0$ +2 +2	$x-1=0$ +1 +1									
$x=2$	$x=1$									
$x+9=0$ -9 -9	$x-6=0$ +6 +6									
$x=-9$	$x=6$									
<p>4) $z^2 - 4 = 0$ $+4 +4$ $\sqrt{z^2} = \sqrt{4}$ OR $(z+2)(z-2) = 0$ $z = -2$ OR $z = 2$ $\{-2, 2\}$</p>	<p>5) $3x^2 - 12 = 0$ $+12 +12$ $3x^2 = 12$ OR $3(x^2 - 4) = 0$ $\frac{3x^2}{3} = \frac{12}{3}$ OR $3(x+2)(x-2) = 0$ $\sqrt{x^2} = \sqrt{4}$ OR $x+2=0$ OR $x-2=0$ $x = -2$ OR $x = 2$ $\{-2, 2\}$</p>	<p>6) $d^2 - 2d = 0$ $d(d-2) = 0$ $d = 0$ OR $d-2=0$ $d = 2$ $\{0, 2\}$</p>								
<p>7) $2x^2 - x = 15$ $-15 -15$ $2x^2 - x - 15 = 0$ $(2x-6)(x+5) = 0$ $(x-3)(x+5) = 0$ $x-3=0$ OR $x+5=0$ $x = 3$ OR $x = -5$ $\{3, -5\}$</p>	<p>8) $3x^2 - 10x + 3 = 0$ $(3x-9)(x-1) = 0$ $(x-3)(3x-1) = 0$ $x-3=0$ OR $3x-1=0$ $x = 3$ OR $x = \frac{1}{3}$ $\{3, \frac{1}{3}\}$</p>	<p>9) $y^2 = 8y + 20$ $-8y -20 -8y -20$ $y^2 - 8y - 20 = 0$ $(y-10)(y+2) = 0$ $y-10=0$ OR $y+2=0$ $y = 10$ OR $y = -2$ $\{10, -2\}$</p>								
<p>10) $x(x-2) = 35$ $x^2 - 2x - 35 = 0$ $(x-7)(x+5) = 0$ $x-7=0$ OR $x+5=0$ $x = 7$ OR $x = -5$ $\{7, -5\}$</p>	<p>11) $x+2 = \frac{12}{x}$ $x \neq 0$ $x(x+2) = 24$ $x^2 + 2x - 24 = 0$ $(x+6)(x-4) = 0$ $x+6=0$ OR $x-4=0$ $x = -6$ OR $x = 4$ $\{-6, 4\}$</p>	<p>12) $\frac{x}{3} = \frac{12}{x}$ $x \neq 0$ $\sqrt{x^2} = \sqrt{36}$ OR $x^2 = 36$ $x = 6$ OR $x = -6$ $\{6, -6\}$</p>								