Bellwork Alg 2A Wednesday, March 15, 2017

Find all real EXACT solutions to each quadratic equation. Use Factoring, Square Roots, and the Quadratic Formula. Each method must be used twice.

1. $2(x-3)^2 - 11 = 53$

2. $x^2 - 2x = 80$

3. $2x^2 - 18 = 9x$

4. $3x^2 - 11 = 13x$

5. $5x^2 - 31 = 9$

6. $3x^2 + 14x - 1 = 0$

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Find all real EXACT solutions to each quadratic equation. Use Factoring, Square Roots, and the Quadratic Formula. Each method must be used twice.

1. $2(x-3)^2 - 11 = 53$ SQUARE ROOTS

$2(x-3)^2 = 64$

$(x-3)^2 = 32$ (16·2)

$x - 3 = \pm\sqrt{32} = \pm 4\sqrt{2}$

$x = 3 \pm 4\sqrt{2}$

2. $x^2 - 2x = 80$ FACTOR

$x^2 - 2x - 80 = 0$

-80, -10, 8, -2

$(x-10)(x+8) = 0$

$x = -8, 10$

3. $2x^2 - 18 = 9x$ FACTOR

$2x^2 - 9x - 18 = 0$

-36, -12, 3, -9

	x	-6
$2x$	$2x^2$	$-12x$
$+3$	$+3x$	-18

$(2x+3)(x-6) = 0$

$x = -3/2, 6$

4. $3x^2 - 11 = 13x$, QUAD FORM

$3x^2 - 13x - 11 = 0$

$b^2 - 4ac = 301$

$x = \frac{13 \pm \sqrt{301}}{6}$

5. $5x^2 - 31 = 9$ SQ ROOTS

$5x^2 = 40$

$x^2 = 8$

$x = \pm\sqrt{8}$ (4·2)

$x = \pm 2\sqrt{2}$

6. $3x^2 + 14x - 1 = 0$ QUAD FORM

$b^2 - 4ac = 208$

$x = \frac{-14 \pm \sqrt{208}}{6} = \frac{-14 \pm 4\sqrt{13}}{6}$ (16·13)

$x = \frac{-7 \pm 2\sqrt{13}}{3}$