

Algebra 1 Bellwork Tuesday, May 24, 2016

1. Find the EXACT solutions to each equation using square roots.

a) $2x^2 + 8 = 56$

b) $(x-3)^2 - 5 = 76$

2. Factor each completely.

a) $3x^3 - 9x^2 - 84x$

b) $8x^2 + 2x - 15$

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1. Find the EXACT solutions to each equation using square roots.

a) $2x^2 + 8 = 56$

$-8 \quad -8$

$\frac{2x^2}{2} = \frac{48}{2}$

$\sqrt{x^2} = \sqrt{24} = \sqrt{4 \cdot 6}$

$x = \pm 2\sqrt{6}$

b) $(x-3)^2 - 5 = 76$

$+5 \quad +5$

$\sqrt{(x-3)^2} = \sqrt{81}$

$x-3 = \pm 9$

$x = 9+3$

$x = -9+3$

ANSWERS

$x = -6, 12$

2. Factor each completely.

a) $3x^3 - 9x^2 - 84x$

$3x(x^2 - 3x - 28)$

$3x(x-7)(x+4)$

$\begin{array}{c} -28 \\ -7 \quad +4 \\ -3 \end{array}$

b) $8x^2 + 2x - 15$

$= (4x-5)(2x+3)$

$\begin{array}{c} -120 \\ 12 \quad -10 \\ 2 \end{array}$

$\begin{array}{c} 2x \quad +3 \\ 4x \quad \begin{array}{|c|c|} \hline 8x^2 & +12x \\ \hline \end{array} \\ -5 \quad \begin{array}{|c|c|} \hline -10x & -15 \\ \hline \end{array} \end{array}$