Bellwork Alg 2 Friday, October 5, 2018

Find all EXACT Complex solutions by factoring or using square roots. You must use each method twice.

1. $16x^2 - 216 = 24x$

2. $12 - 7x^2 + 3 = 71$

3. $9 + 2(2x - 1)^2 = 107$

4. $6x^4 + 18x^2 - 63x = 21x^3$

Bellwork Alg 2 Friday, October 5, 2018 **Answers**

Find all EXACT Complex solutions by factoring or using square roots. You must use each method twice.

1. $16x^2 - 216 = 24x$ FACTOR

$-24x \quad -24x$

$16x^2 - 24x - 216 = 0$

$8(2x^2 - 3x - 27) = 0$

-54, -9, 6, -3

	x	$+3$
$2x$	$2x^2$	$+6x$
-9	$-9x$	-27

$8(x+3)(2x-9) = 0$

$x = -3, 9/2$

2. $12 - 7x^2 + 3 = 71$ SQ ROOTS

$-7x^2 + 15 = 71$

$-15 \quad -15$

$\frac{-7x^2}{-7} = \frac{56}{-7}$

$\sqrt{x^2} = \sqrt{-8} \rightarrow \sqrt{-1 \cdot 4 \cdot 2}$

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

3. $9 + 2(2x-1)^2 = 107$ SQ ROOTS

$-9 \quad -9$

$\frac{2(2x-1)^2}{2} = \frac{98}{2}$

$\sqrt{(2x-1)^2} = \sqrt{49}$

$2x - 1 = \pm 7$

$2x - 1 = 7$ $\quad +1 \quad +1$

$\frac{2x}{2} = \frac{8}{2}$

$2x - 1 = -7$ $\quad +1 \quad +1$

$\frac{2x}{2} = \frac{-6}{2}$

$x = -3, 4$

4. $6x^4 + 18x^2 - 63x = 21x^3$ FACTOR

$-21x^3 \quad -21x^3$

$6x^4 - 21x^3 + 18x^2 - 63x = 0$

$3x(2x^3 - 7x^2 + 6x - 21) = 0$

	$2x$	-7
x^2	$2x^3$	$-7x^2$
$+3$	$+6x$	-21

$3x(2x-7)(x^2+3) = 0$

$3x = 0$ $\quad x = 0$

$2x - 7 = 0$ $\quad x = 7/2$

$x^2 + 3 = 0$ $\quad -3 \quad -3$

$\sqrt{x^2} = \sqrt{-3}$

$x = 0, 7/2, \pm i\sqrt{3}$