

Bellwork Alg 2 Friday, October 5, 2018

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

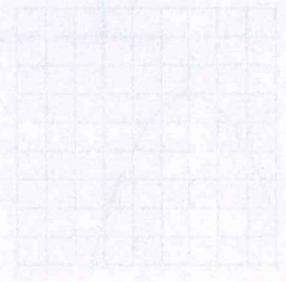
1. $16x^2 - 216 = 24x$

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

3. Write the equation of this parabola in standard form.



3. Write the equation of this parabola in vertex form.



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

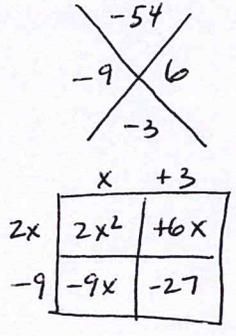
4. $6x^4 + 18x^2 - 63x = 21x^3$

Answers

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

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

$16x^2 - 24x - 216 = 0$
 $8(2x^2 - 3x - 27) = 0$



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

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

$-7x^2 + 15 = 71$
 $-15 \quad -15$
 $-7x^2 = 56$
 $-7 \quad -7$
 $\sqrt{x^2} = \sqrt{-8} \rightarrow \sqrt{-1 \cdot 4 \cdot 2}$
 $x = \pm 2i\sqrt{2}$

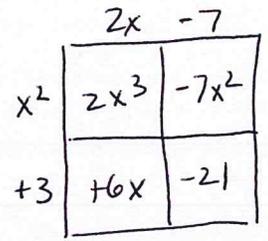
3. $9 + 2(2x-1)^2 = 107$ SQ ROOTS
 $-9 \quad -9$

$\frac{2(2x-1)^2}{2} = \frac{98}{2}$
 $\sqrt{(2x-1)^2} = \sqrt{49}$
 $2x-1 = \pm 7$
 Left branch: $2x-1 = 7$
 $+1 \quad +1$
 $2x = 8$
 $\frac{2x}{2} = \frac{8}{2}$
 $x = 4$
 Right branch: $2x-1 = -7$
 $+1 \quad +1$
 $2x = -6$
 $\frac{2x}{2} = \frac{-6}{2}$
 $x = -3$

$x = -3, 4$

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

$6x^4 - 21x^3 + 18x^2 - 63x = 0$
 $3x(2x^3 - 7x^2 + 6x - 21) = 0$



$3x(2x-7)(x^2+3) = 0$
 Left: $3x = 0 \rightarrow x = 0$
 Middle: $2x-7 = 0 \rightarrow x = 7/2$
 Right: $x^2+3 = 0$
 $-3 \quad -3$
 $\sqrt{x^2} = \sqrt{-3}$
 $x = \pm i\sqrt{3}$

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