Bellwork Alg 2 Thursday, October 11, 2018

1. Simplify: $(2-i)^4$

Find ALL EXACT COMPLEX solutions using the following methods once each: Factoring, Sqare Roots, Completing the Square.

2. $x^2+3x-208=0$

3. $4x^2+43=19$

4. $x^2+4x+13=0$

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ANSWERS

1. Simplify: $(2-i)^4$

$= (2-i)^2(2-i)^2$

	2	$-i$
2	4	$-2i$
$-i$	$-2i$	$+i^2 = -1$

$= (3-4i)(3-4i)$

	3	$-4i$
3	9	$-12i$
$-4i$	$-12i$	$+16i^2 = -16$

$= -7-24i$

Find ALL EXACT COMPLEX solutions using the following methods once each: Factoring, Sqare Roots, Completing the Square.

2. $x^2 + 3x - 208 = 0$

Factor

-208

$+16 \quad -13$

$+3$

$(x+16)(x-13) = 0$

$x = -16, 13$

3. $4x^2 + 43 = 19$

Sq Roots

$4x^2 + 43 = 19$

$-43 \quad -43$

$\frac{4x^2}{4} = \frac{-24}{4}$

$\sqrt{x^2} = \sqrt{-6}$

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

4. $x^2 + 4x + 13 = 0$

Complete the Square

$x^2 + 4x + 13 = 0$

$-13 \quad -13$

$x^2 + 4x + \underline{+4} = -13 \underline{+4}$

$(x+2)^2$

$\sqrt{(x+2)^2} = \sqrt{-9}$

$x + 2 = \pm 3i$

$-2 \quad -2$

$x = -2 \pm 3i$