BECA/Huson/Algebra 2: Complex Numbers & Rational Exponents Name:
7 March 2024

3.18 PreQuiz: Solving quadratics, complex numbers, radicals and exponents

Do Not Use a Calculator A2.REI.4 Solve quadratic equations

1. Solve by factoring.

$$x^2 - 5x + 6 = 0$$

2. Solve by completing the square.

$$x^2 + 10x + 20 = 0$$

3. Solve by using the quadratic formula.

$$2x^2 - 5x + 7 = 0$$

4. Select all of the solutions to $(x-4)^2 = 7$. (HSN.CN.2 Complex numbers)

   (a) $x = 4 + 7i$

   (b) $x = 4 - 7i$

   (c) $x = 4 - \sqrt{7}$

   (d) $x = 4 - 7 = -3$

   (e) $x = 4 + 7 = 11$

   (f) $x = 4 + \sqrt{7}$

5. Write each expression in the form $a + bi$ with a, b real numbers.

   Given $s = -4 - i$ and $t = 5 + 3i$.

   (a) $s + t =$

   (b) $s - t =$

   (c) $st =$

6. Simplify each expression. (HSN.RN.2 Rational exponents)

   (a) $27^{\frac{2}{3}} =$

   (b) $\left(\sqrt{\frac{1}{4}}\right)^{-3} =$

7. Simplify each radical expression.

   (a) $\sqrt{81} =$

   (b) $\sqrt{18} =$

   (c) $\sqrt{-50} =$

   (d) $\dfrac{\sqrt{-8}}{\sqrt{2}} =$