3.19 Quiz: Solving quadratics, complex numbers, radicals and exponents

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

1. Solve by factoring.
$$x^2 + 8x + 15 = 0$$

2. Solve by completing the square.
$$x^2 + 8x + 13 = 0$$

3. Solve by using the quadratic formula.
$$2x^2 + 3x - 6 = 0$$

4. Select all of the solutions to $(x + 2)^2 = -9$. (HSN.CN.2 Complex numbers)

(a) $x = -2 + 3i$

(b) $x = -2 - 3i$

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

(d) $x = 2 - 3 = -1$

(e) $x = 2 + 3 = 5$

(f) $x = -2 + \sqrt{3}$

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

Given $u = 7 + 2i$ and $v = 3 - 5i$.

(a) $u + v =$

(b) $u - v =$

(c) $uv =$

6. Simplify each radical expression.

(a) $\sqrt{25} =$

(b) $\sqrt{-20} =$

(c) $\sqrt{27} =$

(d) $\dfrac{\sqrt{-16}}{\sqrt{4}} =$

7. Simplify each expression. (HSN.RN.A Rational exponents)

(a) $4^{\frac{3}{2}} =$

(b) $\left(\sqrt{\frac{4}{9}}\right)^{-1} =$