BECA / Huson / Precalculus: Exponential functions First & last name:
28 February 2025 Section:

5.3 Pre-Quiz: Cumulative year-to-date standards

1. Simplify to standard form. *A.APR.1 Perform operations with polynomials*

   $(x^3 - 3x^2 - 3x - 9) - (2x^3 - x^2 - 5)$

2. Select each correct equation.

   (a) $x^2 - 49 = (x - 7)(x + 7)$

   (b) $x^2 + 14x - 49 = (x - 7)^2$

   (c) $x^2 + 14x + 49 = (x + 7)^2$

   (d) $x^2 + 49 = (x + 7)(x - 7)$

   (e) $x^3 - y^3 = (x + y)(x^2 - xy + y^2)$

   (f) $x^3 + y^3 = (x - y)(x^2 + xy + y^2)$

3. Write down the solutions to $5x(x-9)(3x+5) = 0$. *A.APR.3 Find zeros of polynomials*

4. Solve: $x + 5 = \dfrac{9x + 37}{x + 5}$ *A.REI.2 Solve rational and radical equations*

5. Solve for x and check.

   (a) $\sqrt{x + 1} + 18 = 16$

   (b) Check your solution.

6. Write a recursive definition of the sequence *F.BF.2 Sequences*

   $a_1 = -1$, $a_2 = -\frac{3}{2}$, $a_3 = -2$, $a_4 = -\frac{5}{2}, \ldots$

7. Simplify to the form $a + bi$ with a, b real numbers. *N.CN.2 Complex numbers*

   (a) $(5 - i) - (2 + 3i)$

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

8. Simplify each expression, using imaginary numbers as necessary.

   (a) $\sqrt{-64} =$

   (b) $\frac{1}{3}\sqrt{-18} =$

9. Rewrite each expression as a radical. *N.RN.2 Radicals and rational exponents*

   (a) $5^{\frac{1}{3}} =$

   (b) $(8y)^{-\frac{2}{3}} =$

10. Rewrite each expression as a fractional exponent. $x > 0$

    (a) $\sqrt{11} =$

    (b) $\sqrt[5]{x^3} =$