

REVIEW Solving Polynomials

Name: _____

1. a. Write an expression that represents the area of the top face of a cylinder when the height is $x + 2$ and the volume of the cylinder is $x^3 - x^2 - 6x$. $A = \frac{V}{h}$

b. Evaluate the area for $A(6)$ and $A(10.2)$

2. Determine whether the given binomial is a factor of the polynomial $P(x)$. Also, explain the meaning of the remainder.

a. $(x + 2)$; $(x^2 + 5x + 6)$

b. $(2x - 3)$; $(3x^4 - 6x^3 - 30)$

3. Write the factored form of the simplest function with zeros $2i$, $-2i$ and -6 . What is the degree of the polynomial?

4. Write the factored form of the simplest function with zeros $-3i$, $6i$, and 5 . What is the degree of the polynomial?

5. Solve the following polynomials by finding the linear or quadratic factors and the zeros. Use factoring methods, synthetic division, quadratic formula and graphing as needed.

a. $2x^3 + x^2 + 8x + 4 = 0$

b. $64x^3 - 8 = 0$

c. $11x^3 - 7x - 4 = 0$

d. $x^4 + x^3 + 7x^2 + 9x = 18$