

Algebra II
Polynomials #4

Name _____

Find the zeros of the following.

1. $f(x) = (x + 7)(5x - 4)(x - 1)$

2. $g(x) = (2x + 1)^7(x - 2)^2(3x + 1)$

3. $h(x) = x^3 - 2x^2 - 24x$

4. $p(x) = x^3 - 27$

5. $y = \frac{3}{8}(x + 2)(4x - 5)(9x + 2)$

6. $f(x) = \frac{x^3 + 64}{100}$

Determine whether the binomial is a factor of the polynomial function. If it is, factor the function completely.

7. $g(x) = 3x^3 - 28x^2 + 29x + 140$; $x + 7$

8. $f(x) = x^3 - x^2 - 20x$; $x + 4$

9. $p(x) = x^4 + 4x^3 - 64x - 256$; $x + 4$

10. $h(x) = 6x^5 - 15x^4 - 9x^3$; $x + 3$

Write the polynomial in standard with the given zeros.

11. -2, 3, 6

12. -4, -2, 5

13. -2, 3i, -3i

14. -2, $1 + \sqrt{7}$, $1 - \sqrt{7}$

15. What is the value of k such that $x - 6$ is a factor of $f(x) = 3x^3 - 17x^2 - kx + 18$?

16. Fill in the blank of the divisor so that the remainder is 0. $f(x) = 2x^3 + 7x^2 - 4x$; $(x + \underline{\hspace{1cm}})$