Lesson 4.5 Practice: The Factor Theorem and Factoring Polynomials

School Launch · Algebra II · Unit 4: Polynomial Functions · Worksheet A

Calculator for decimals

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. Given that $x + 2$ is a factor, factor $f(x) = x^3 + x^2 - 14x - 24$ completely and list its zeros. EASY

2. Given that $x - 4$ is a factor, factor $f(x) = x^3 + x^2 - 14x - 24$ completely and list its zeros. EASY

3. Given that $x + 2$ is a factor, factor $f(x) = x^3 - 5x^2 - 2x + 24$ completely and list its zeros. EASY

4. Given that $x + 2$ is a factor, factor $f(x) = x^3 + x^2 - 22x - 40$ completely and list its zeros. MEDIUM

5. Given that $x - 4$ is a factor, factor $f(x) = x^3 - 6x^2 + 5x + 12$ completely and list its zeros. MEDIUM

6. Given that $x - 3$ is a factor, factor $f(x) = x^3 - 3x^2 - 4x + 12$ completely and list its zeros. MEDIUM

7. Given that $x + 4$ is a factor, factor $f(x) = x^3 - x^2 - 16x + 16$ completely and list its zeros. MEDIUM

8. Given that $x + 4$ is a factor, factor $f(x) = 2x^3 + 2x^2 - 20x + 16$ completely and list its zeros. HARD

9. Given that $x + 1$ is a factor, factor $f(x) = x^3 - 5x^2 + 2x + 8$ completely and list its zeros. HARD

10. Given that $x + 2$ is a factor, factor $f(x) = 2x^3 + 2x^2 - 28x - 48$ completely and list its zeros. HARD