

Assignment

Date _____ Period _____

Factor each and find all zeros. One factor has been given.

1) $f(x) = x^4 - 15x^3 + 49x^2 - 57x + 22; x - 2$

2) $f(x) = x^4 - 2x^3 - 16x^2 + 2x + 15; x - 5$

3) $f(x) = x^4 - 3x^3 - 3x^2 + 7x + 6; x - 2$

4) $f(x) = x^4 + 3x^3 - 11x^2 - 3x + 10; x + 5$

5) $f(x) = x^4 - 18x^3 + 72x^2 - 94x + 39; x - 3$

6) $f(x) = x^4 - 5x^3 - 4x^2 + 20x; x - 5$

7) $f(x) = x^4 - x^3 - 7x^2 + x + 6; x + 2$

8) $f(x) = x^4 - 12x^3 + 34x^2 + 12x - 35; x - 5$

Answers to Assignment (ID: 1)

- 1) Factors to: $f(x) = (x - 11)(x - 1)^2(x - 2)$
Rational zeros: $\{11, 1 \text{ mult. } 2, 2\}$
- 2) Factors to: $f(x) = (x + 3)(x + 1)(x - 1)(x - 5)$
Rational zeros: $\{-3, -1, 1, 5\}$
- 3) Factors to: $f(x) = (x - 3)(x + 1)^2(x - 2)$
Rational zeros: $\{3, -1 \text{ mult. } 2, 2\}$
- 4) Factors to: $f(x) = (x - 2)(x + 1)(x - 1)(x + 5)$
Rational zeros: $\{2, -1, 1, -5\}$
- 5) Factors to: $f(x) = (x - 1)^2(x - 13)(x - 3)$
Rational zeros: $\{1 \text{ mult. } 2, 13, 3\}$
- 6) Factors to: $f(x) = x(x + 2)(x - 2)(x - 5)$
Rational zeros: $\{0, -2, 2, 5\}$
- 7) Factors to: $f(x) = (x - 3)(x + 1)(x - 1)(x + 2)$
Rational zeros: $\{3, -1, 1, -2\}$
- 8) Factors to: $f(x) = (x - 7)(x + 1)(x - 1)(x - 5)$
Rational zeros: $\{7, -1, 1, 5\}$