

Algebra 3 Assignment # 12

(1) Divide. Express each answer as a polynomial or a mixed expression please.

(a) $\frac{x^3 - 2x^2 - 13x + 5}{x + 3}$

(b) $\frac{7x^4 - 8x^2 + 11x - 10}{x - 1}$

(c) $\frac{8x^3 + 8x^2 + 4x + 1}{2x + 1}$

(d) $\frac{x^4 + 2x^3 - 13x^2 - 14x + 22}{x^2 - x - 6}$

(e) $\frac{2x^4 + 5x^3 + 2x^2 - 13x - 12}{x^2 + 3x + 4}$

(2) Factor $x^4 - 7x^3 + 17x^2 - 17x + 6$ given $x^2 - 3x + 2$ is a factor.

(3) Find each of the following numbers if $f(x) = 2x^4 - 9x^3 - 3x^2 - 12x + 15$

(a) $f(0)$

(c) $f(-1)$

(b) $f(1)$

(d) $f(5)$

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Answers

(1) (a) $x^2 - 5x + 2 + \frac{-1}{x + 3}$

(b) $7x^3 + 7x^2 - x + 10$

(c) $4x^2 + 2x + 1$

(d) $x^2 + 3x - 4 + \frac{-2}{x^2 - x - 6}$

(e) $2x^2 - x - 3$

(2) $(x - 1)^2(x - 2)(x - 3)$

(3) (a) 15

(c) 35

(b) -7

(d) 5