Name_____

Algebra 2

Corrective Assignment 7.5

Divide using polynomial long division.

1) $(7p^3 - 45p^2 + 40p + 54) \div (p - 5)$

2) $(10x^3 + x^2 - 17x - 8) \div (x + 1)$

3) $(x^3 - 2x^2) \div (x - 2)$

4) $(a^4 + 2a^3 - 67a^2 + 25a + 31) \div (a - 7)$

Divide using synthetic division.

5) $(x^3 - 8x^2 + 7x + 39) \div (x - 4)$

6) $(12x^4 + 27x^3 + 18x^2 + 33x + 23) \div (x + 2)$

7) $(11b^3 - 120b^2 - 133b - 132) \div (b - 12)$

8) $(11n^3 + 6n^2 - 15n - 10) \div (n + 1)$

Use the Factor Theorem to determine whether the given binomial is a factor of the given polynomial.

9) $(x^4 - 12x^3 + 40x^2 - 14x - 70) \div (x - 6)$

10) $(n^3 - 4n^2) \div (n - 4)$

11) $(9b^3 - 18b^2 - 2b) \div (b - 2)$

12) $(x^4 - 9x^3 - 12x^2 + 19x + 10) \div (x - 10)$

Given a polynomial f(x) and a factor of f(x), factor f(x) completely.

13) $f(x) = 9x^3 + 36x^2 + 17x - 30;\ 3x - 2$

14) $f(x) = 6x^3 + 7x^2 - 23x - 30;\ 3x + 5$

15) $f(x) = 15x^3 - 73x^2 - 18x + 40;\ 3x - 2$

16) $f(x) = 3x^3 - 7x^2 - 7x + 3;\ x - 3$

Answers to Corrective Assignment 7.5

1) $7p^2 - 10p - 10 + \frac{4}{p-5}$

2) $10x^2 - 9x - 8$

3) x^2

4) $a^3 + 9a^2 - 4a - 3 + \frac{10}{a-7}$

5) $x^2 - 4x - 9 + \frac{3}{x-4}$

6) $12x^3 + 3x^2 + 12x + 9 + \frac{5}{x+2}$

7) $11b^2 + 12b + 11$

8) $11n^2 - 5n - 10$

9) No

10) Yes

11) No

12) Yes

13) Factors to: $f(x) = (3x + 5)(x + 3)(3x - 2)$
Zeros: $\left\{-\frac{5}{3}, -3, \frac{2}{3}\right\}$

14) Factors to: $f(x) = (2x + 3)(x - 2)(3x + 5)$
Zeros: $\left\{-\frac{3}{2}, 2, -\frac{5}{3}\right\}$

15) Factors to: $f(x) = (5x + 4)(x - 5)(3x - 2)$
Zeros: $\left\{-\frac{4}{5}, 5, \frac{2}{3}\right\}$

16) Factors to: $f(x) = (x + 1)(3x - 1)(x - 3)$
Zeros: $\left\{-1, \frac{1}{3}, 3\right\}$