

## Algebra 3 Assignment # 3

Use Synthetic Division

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

(2)  $(x^4 - 3x^3 + 7x^2 - 2x + 1) \div (x + 2)$

(3)  $(x^3 - 27) \div (x - 3)$

(4)  $(x^4 - 16) \div (x - 2)$

(5)  $\left(x^4 - \frac{1}{2}x^3 + \frac{1}{3}x^2 - \frac{1}{4}x + \frac{1}{5}\right) \div (x - 1)$

(6)  $(6x^3 - 5x^2 - 3x + 4) \div (2x - 1)$

(7)  $(6x^3 + 7x^2 + x + 8) \div (2x + 3)$

Answers:

1.  $x^2 + 7x + 7 + \frac{22}{x-2}$

2.  $x^3 - 5x^2 + 17x - 36 + \frac{73}{x+2}$

3.  $x^2 + 3x + 9$

4.  $x^3 + 2x^2 + 4x + 8$

5.  $x^3 + \frac{1}{2}x^2 + \frac{5}{6}x + \frac{7}{12} + \frac{47}{60(x-1)}$

6.  $3x^2 - x + 2 + \frac{2}{2x-1}$

7.  $3x^2 - x + 2 + \frac{2}{2x+3}$