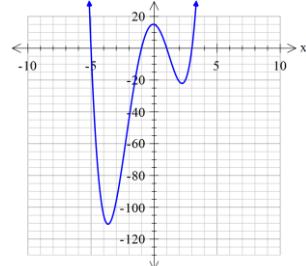


## Chapter 6 Polynomials Review KEY

1)  $f(x) = (x + 2)(x - 3)(x - 4)$     2) remainder 1    3) Answers will vary...sample

4) as  $x \rightarrow -\infty, y \rightarrow \infty$ ; as  $x \rightarrow \infty, y \rightarrow -\infty$

5) as  $x \rightarrow -\infty, y \rightarrow \infty$ ; as  $x \rightarrow \infty, y \rightarrow \infty$



6)

x-intercepts:  $(-0.55, 0), (0.853, 0)$ , and  $(3.197, 0)$

relative max: 7.407

max: None

relative min: -3

min: None

end behavior: as  $x \rightarrow \infty, f(x) \rightarrow -\infty$   
as  $x \rightarrow -\infty, f(x) \rightarrow +\infty$

increasing:  $(0, 2.26)$

decreasing:  $(-\infty, 0)$  and  $(2.26, \infty)$

7)

x-intercepts:  $(-2.334, 0), (-0.742, 0), (0.742, 0)$ , and  $(2.334, 0)$

relative max: 3

max: None

relative min: -6

min: -6

end behavior: as  $x \rightarrow \infty, f(x) \rightarrow +\infty$   
as  $x \rightarrow -\infty, f(x) \rightarrow +\infty$

increasing:  $(-1.732, 0)$  and  $(1.732, \infty)$

decreasing:  $(-\infty, -1.732)$  and  $(0, 1.732)$

8)  $6x^3 - 9x^2 + 3x + 3$     9)  $-3x^3 + 3x^2 - 5x + 7$     10)  $4x^3 + 8x^2 - 3x - 9$

11)  $4x^4 - 7x^3 + 4x^2 + 25x - 7$     12)  $5x^3 - 29x^2 - 14x + 48$     13)  $2x^2 - x + 8 - \frac{4}{x-5}$

14)  $x^3 + 3x^2 - x - 1$     15)  $x^3 - 28x + 48$

16)  $x = 2, 5$     17)  $f(x) = (x - 1)(3x + 2)(3x - 2)$     18) B    19) C

20)  $(x - 3)(x^2 + 3x + 9)$     21)  $(x - 2)(x + 2)(2x + 3)$

22)  $2x(x + 2)(x^2 - 2x + 4)$     23)  $2x(3x - 4)(x + 2)$

24)  $(x + 1)(x - 1)(x + 3)(x - 3)$     25)  $(x - 2)(2x^3 + 3)$

26)  $\pm 1, \pm 2, \pm 3, \pm 6, \pm 9, \pm 18, \pm \frac{1}{3}, \pm \frac{2}{3}$