Calculus for Business/Economics
Chapter 3 Test Review

1. Find the domain of:

   a)
   $$f(x)=\frac{x-2}{x^2-7x+12}$$

   b)
   $$f(x)=\sqrt{3x-2}$$

2. Find the x-intercepts of:

   a) $f(x)=\dfrac{x^2-49}{x^2-9x+2}$

   b) $f(x)=x\sqrt{x^2-4}$

   c) $f(x)=x^3-7x+2$

3. Find the y-intercept of:

   a) $f(x)=\dfrac{x^2-8x+5}{x^2-2x+3}$

   a) $f(x)=x^2-4x-1$

4. Find the vertical asymptotes of $f(x)=\dfrac{x+3}{x^2+12x+27}$

5. Find the horizontal asymptotes of

   a) $f(x)=\dfrac{8x^2-5x+2}{7x^2-2x+3}$

   a) $f(x)=\dfrac{5x^2-1}{x^3-4x+8}$

   a) $f(x)=\dfrac{2x^5-3x+1}{x^2-x}$

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6. Find the slant asymptote of $f(x) = \dfrac{x^2 + 8x - 2}{x - 4}$

7. Without using the calculator or the techniques learned in college algebra, find:

a) Find $\lim\limits_{x \to \infty} \dfrac{9x^2 - 4x + 2}{11x^2 - 5x + 1}$

b) Find $\lim\limits_{x \to \infty} \dfrac{5x^2 - 2}{4x^3 - 5x^2 + 1}$

8. Find the concavity and point(s) of inflection of $f(x) = x^4 - 12x^3 + 48x^2 - 64x$

9. Find the intervals where the graph is increasing and decreasing and any relative extrema of $f(x) = \dfrac{x^2 - 2x + 4}{x - 2}$

(Note: might be a fraction or a polynomial)

10. Find the price elasticity of demand for the demand function at the indicated x-value. Is the demand elastic, inelastic, or of unit elasticity at the indicated x-value. Identify the intervals of elasticity and inelasticity

Demand Function	Quantity Demanded
P = 500 – 2x	X = 50