Precalc/Trig 2.1–2.2 Quiz Review

ALL SUPPORTING WORKMUST BE SHOWN TO OBTAIN FULL CREDIT

Use the values of k and a (and n & c when $0 < a < 1$) to describe the graph.

a) For k: starting Quadrant; included point (1, k) ; vertical stretch or shrink

b) For a: asymptotic or through (0,0); symmetry with origin or y-axis; Quadrant due to symmetry; (1,k) 's symmetrical partner

c) For n: what type of symmetry
For c: reflection or no reflection

d) Then sketch the graph

1) $f(x) = 4x^{-3}$

2) $f(x) = -3x^{1/3}$

3) $f(x) = \frac{1}{4}x^8$

4) $f(x) = 6x^{3/8}$

CALCULATOR PORTION

Describe how to obtain the graph of the given monomial function from the graph of $g(x) = x^n$ with the same power n. Determine if even or odd.

5) $f(x) = 7x^3$

6) $f(x) = -2.5x^6$

Solve the problem.

7) The number of mosquitoes M(x), in millions, in a certain area depends on the June rainfall x, in inches: $M(x) = 13x - x^2$. What rainfall produces the maximum number of mosquitoes?

Solve the problem. Round as appropriate.

8) The intensity I of light varies inversely as the square of the distance D from the source. If the intensity of illumination on a screen 5 ft from a light is 3 foot-candles, find the intensity on a screen 15 ft from the light.

Write an equation for the quadratic function whose graph contains the given vertex and point.

9) Vertex (4, 4), point (3, 6)

Write the equation in vertex form. Then find the vertex and axis of symmetry of the graph of the function.

10) $f(x) = 2x^2 - 20x + 53$

Write a sentence that expresses the relationship in the formula, using the language of variation or proportion.

11) $r = d/t$, where r is the rate , distance is d, time is t

Write the statement as a power function equation. Use k as the constant of variation.

12) The area of an equilateral triangle varies directly as the square of the side s.