

Unit 3 Review

Secondary 3 Honors

Complete this assignment on a separate sheet of paper.

Precalculus Book:

Pg 173 3, 24, 25, 49, 57

Pg 655 17

Non-Calculator.

1) $f(x) = 7$, $g(x) = \sqrt{x-3}$, $h(x) = x^2 + 2$

a) $g \circ f(x)$ b) $g \circ h(3)$ c) $h \circ g \circ f(x)$ d) range of $h(x)$

2) If $(4, -5)$ is a point of $f(x)$, name a point on the following:

a) $y = 3f(x) + 2$ b) $y = f(x + 3) - 1$ c) $y = -f(x) + 4$

3) Factor the following **using factoring methods**. (This means you should NOT be using division, the quadratic formula, or your calculator.)

a) $ac + ad - bc - bd$ b) $9x^2 - 16$ c) $x^2 + 23x - 24$

d) $x^2 - 144$ e) $6y^2 - y - 2$ f) $5t^2 + 2t - 3$

g) $16d^2 - 8d + 1$ h) $8xy + 10xz - 14xw$ i) $3x^3 + 24$

j) $3x^3 - 5x^2 + 48x - 80$ k) $8x^3 - 1$

4) Write a polynomial equation using real coefficients with zeros at $x = -1, 3i$

5) Sketch the graph of the polynomial

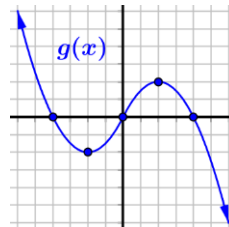
$$y = 2x(x - 3)^2(2x + 3)(1 - x)^2$$

6) Solve the inequality.

$$-3x(x + 5)^2(-2x + 3)^3 \leq 0$$

7) Use the graph of $g(x)$ to sketch the adjustments

- a) $-g(x) + 2$
- b) $g(2(x - 3))$
- c) Is $g(x)$ one-to-one?



8) Find the domain and range of $f(x) = x^2 + 4$

Calculator.

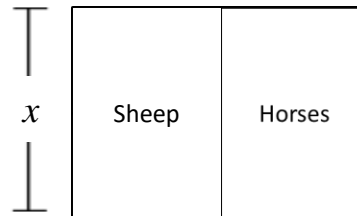
9) Solve using quadratic formula $3x^2 + 3x + 1 = 0$

10) Find all zeros of $f(x) = 2x^3 - 5x^2 - 3x$

11) Find all zeros of $f(x) = x^3 - 7x^2 + 11x + 19$

12) A rancher has a pasture with sheep and horses. She has 3000 ft of fencing to create separate corrals, as pictured below. She wants to use the maximum area possible. **Include units in your answers.**

- a) Find the area equation $A(x)$
- b) What is the maximum area?
- c) What are the dimensions for corral?



13) Use your graphing calculator to solve the following inequality.

$$\sqrt[3]{x+5} \leq |3x^2 - 4|$$

14) Find the fourth term in the expansion $(2x + y)^8$