San José State University Fall 2015

Math-8: College Algebra Section 03: MW noon-1:15pm Section 05: MW 4:30-5:45pm

Exam 3

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Name·			

For problems 1-4, define the following:

$$f(x) = x^2 - 8x + 12$$

$$g(x) = \sqrt[4]{x}$$

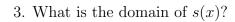
$$h(x) = \sqrt[9]{x+1}$$

$$s(x) = \frac{h}{(g \circ f)}(x)$$

$$t(x) = \frac{f(x)}{f(x)}$$

1. Determine s(x)

2. Evaluate s(0). Leave the answer in exact form.



4. Sketch the graph of
$$t(x)$$
. Be sure to label all important values.

5. (True or false):
$$(f \circ g) = (g \circ f)$$
.

6. Let
$$h(x) = \frac{2}{x+1} + x + 1$$
. Find suitable $f(x)$ and $g(x)$ such that $h(x) = (g \circ f)(x)$.

7. Divide $x^4 - x^2 + 2$ by $x^2 + 1$. State the answer in division algorithm form.

8. Find all points of intersection for:

$$x^2 + y - 6x + 7 = 0$$
$$x - y = 3$$

9. Find all solutions (if any):

$$x + 4z = 1$$

 $x + y + 10z = 10$
 $2x - y + 2z = -5$

10. Determine all x and y intercepts, use the leading coefficient test to determine behavior as $x \to \pm \infty$, and sketch the following polynomial. Be sure to label all important points and explain how you arrived at the sign for each interval between the x intercepts.

$$f(x) = x^4 + 3x^3 - 9x^2 - 23x - 12$$