

Refresher Course Math 1050 and 1060 Practice Problems Set 4 Fall 2007

1.) Sketch the graph of each of the following:

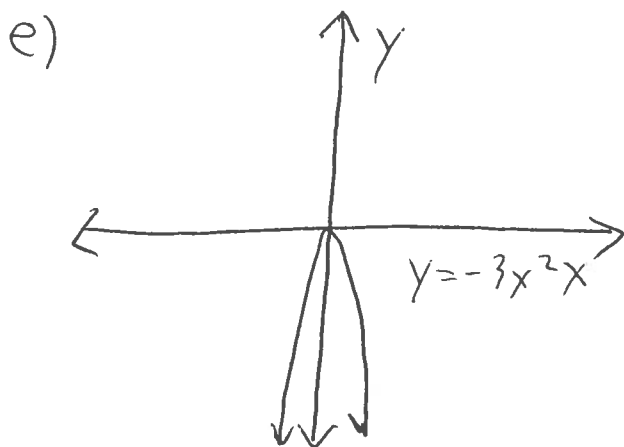
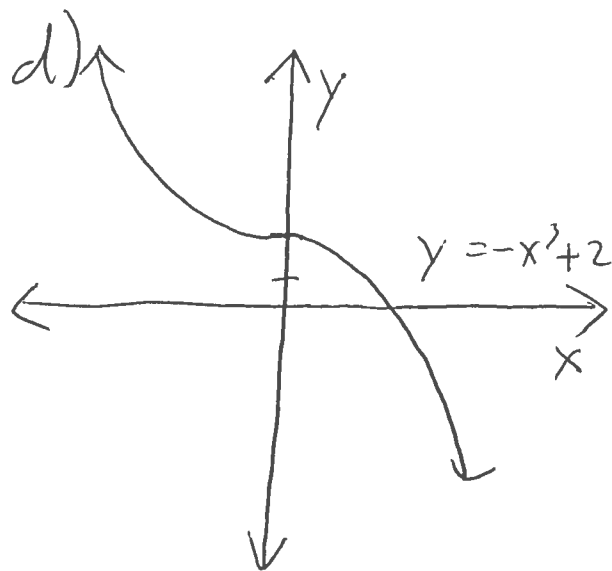
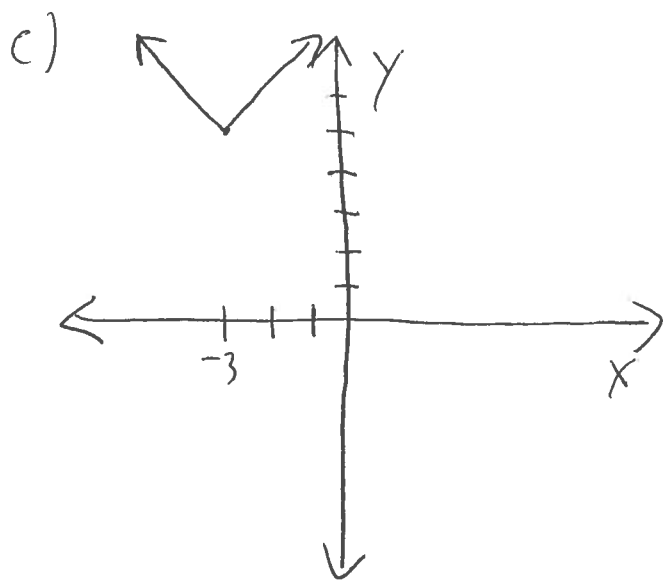
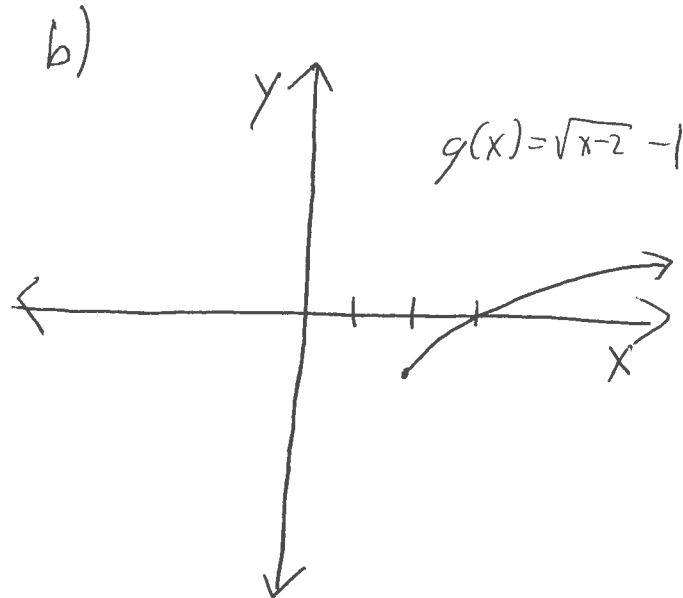
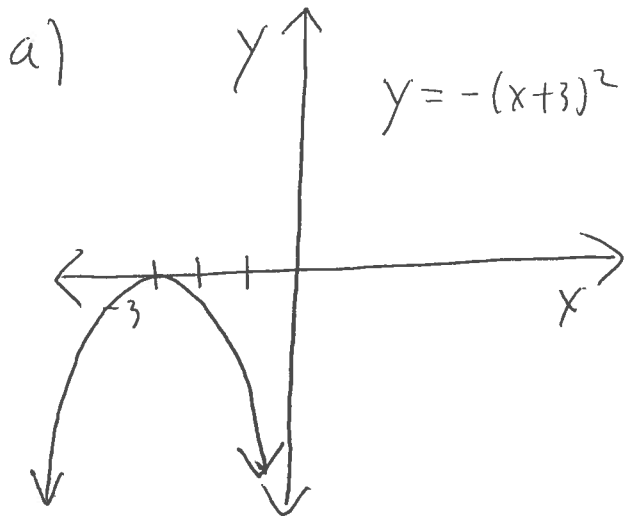
a.) $y = -(x+3)^2$

b.) $g(x) = \sqrt{x-2} - 1$

c.) $y = |x+3| + 5$

d.) $f(x) = -x^3 + 2$

e.) $p(x) = -3x^2$



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- 2.) Let $f(x) = 2x + 1$ and $g(x) = x^2 + 2x - 1$. Find $(f - g)(x)$. Then evaluate the difference when $x = 2$.

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

$$(f - g)(2) = -2^2 + 2 = \boxed{-2}$$

- 3.) Let $f(x) = x$ and $g(x) = \sqrt{x}$. Find the domain of $f + g$.

Domain of $f(x)$ is all real numbers.

Domain of $g(x)$ is $x \geq 0$.

So, domain of $f + g$ is $x \geq 0$.

- 4.) Let $f(x) = \frac{2}{x-7}$ and $g(x) = x-5$. Find $f \circ g$ and its domain.

$$\frac{2}{(x-5)-7} = \frac{2}{x-12} \quad \text{Domain is } x \neq 12$$

- 5.) Find the inverse of $f(x) = \frac{5-3x}{2}$.

$$x = \frac{5-3y}{2}$$

$$2x = 5 - 3y$$

$$3y = 5 - 2x$$

$$y = \frac{5-2x}{3}$$