Math 148-AN Quiz #1 Satake

Name: KEY

Read all directions and problems carefully! Show all appropriate work for credit.

1. State the domain for each of the following functions in **Interval Notation**.

a) $n(x)=|3x+7|$ $(-\infty,\infty)$ +1

b) $r(x)=\frac{2}{x+3}$ $x+3\neq 0$ $(-\infty,-3)\cup(-3,\infty)$ +1

c) $h(x)=2\sqrt{x+4}$ $x+4\geq 0$ $[-4,\infty)$ +1

2. For the following parabola, state its vertex, axis, x-intercepts, and y-intercept.

$p(x)=-2x^2-12x-16$

$h=\frac{-b}{2a}=\frac{-(-12)}{2(-2)}=-3$; $p(-3)=2$

OR 2ND CALC. MAX

VERTEX: $V(-3,2)$

AXIS: $x=-3$

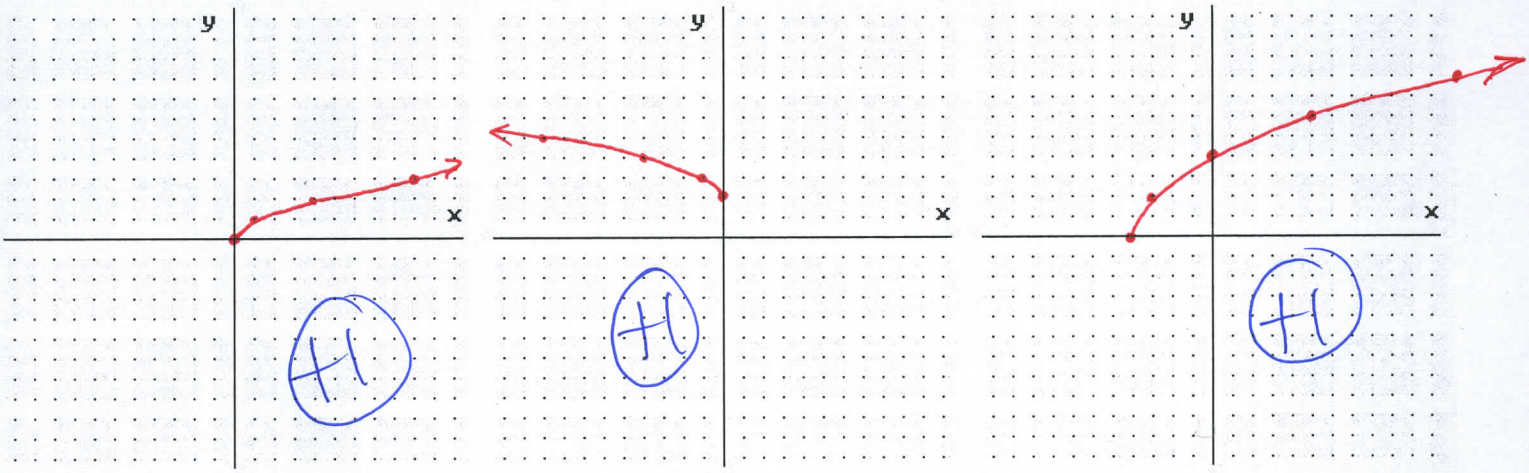
X-INT'S: $(-4,0)$; $(-2,0)$

Y-INT: $(0,-16)$

+3

3. a) Sketch the graphs of the three given functions by hand. b) Describe in a brief sentence how $g(x)$ and $h(x)$ where obtained by transforming $f(x)$. (14 pts.)

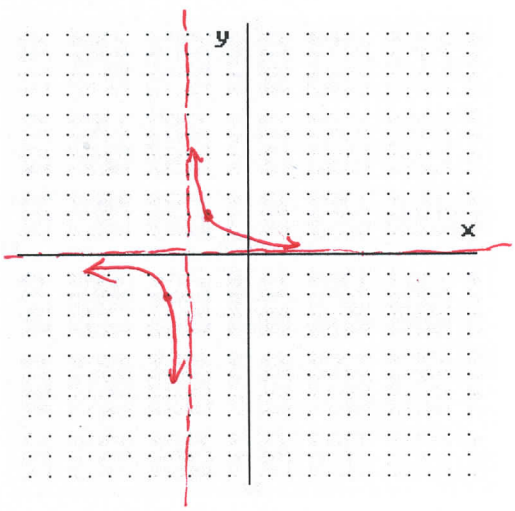
$f(x)=\sqrt{x}$ $g(x)=\sqrt{-x}+2$ $h(x)=2\sqrt{x+4}$



+1 +1 +1

4. Find any horizontal and vertical asymptotes and any holes that may exist for each rational function. Draw a rough sketch of the function, including the asymptotes.

$r(x)=\frac{2}{x+3}$



HA: $y=0$

VA: $x=-3$

NO HOLES

+4

$g(x)$: - HORIZONTAL REFLECTION

- UP 2

$h(x)$: - VERTICAL STRETCH B.A.F.O. 2

- LEFT 4

+2

15