Pre Calc 3-4 thru 3-6 Extra Practice Name _____

$f(-x)=-f(x)$ $f(-x)=f(x)$

Determine whether the function is odd, even or neither.

1) $f(x)=x^3-x$

$f(-x)=(-x)^3-(-x)$

$=-x^3+x=-f(x)$

ODD $\neq f(x)$ (NOT EVEN)

2) $f(x)=x^2+7$

$f(-x)=(-x)^2+7$

$=x^2+7=f(x)$

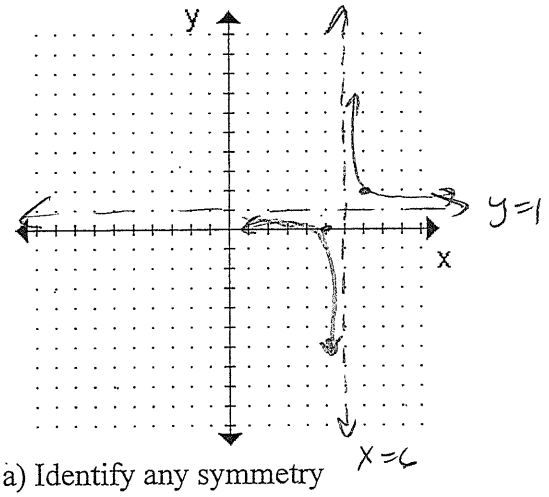
EVEN

$\neq -f(x)$

(NOT ODD)

3) $y=\dfrac{1}{(x-6)}+1$ ↑1

R6



a) Identify any symmetry

POINT (6,1)

b) Identify asymptotes

$x=6$

$y=1$

c) State Domain & Range

D: $\{x \mid x \neq 6\}$

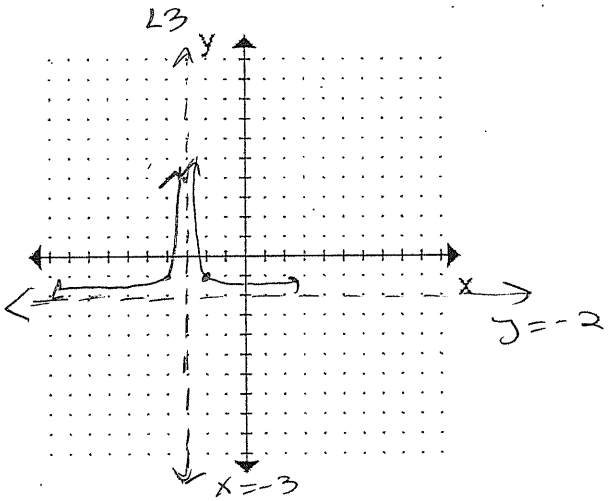
R: $\{y \mid y \neq 1\}$

d) Describe transformation from the parent function

Right 6, up 1

4) $y=\dfrac{1}{(x+3)^2}-2$ ↓2

L3



a) Identify any symmetry

LINE $x=-3$

b) Identify asymptotes

$x=-3$

$y=-2$

c) State Domain & Range

D: $\{x \mid x \neq -3\}$

R: $\{y \mid y > -2\}$

d) Describe transformation from the parent function

Left 3, Down 2

5) The parent function $y = x^2$ has been transformed by $s(x,y) = \left(4x, \frac{y}{2}\right)$.

a) Write the equation for the image.

$\frac{y}{2} = \left(\frac{1}{4}x\right)^2$ or $y = \frac{1}{2}\left(\frac{1}{4}x^2\right)$

b) Describe the transformation in words of the parent function mapped onto the image.

Horizontal Stretch by 4

Vertical Shrink by $\frac{1}{2}$

6) The parent function $y = \sqrt{x}$ has been transformed by $s(x,y) = \left(\frac{x}{5}, 6y\right)$

a) Write the equation for the image.

$\frac{y}{6} = \sqrt{5x}$

b) Describe the transformation in words of the parent function mapped onto the image.

Horizontal Shrink by $1/5$

Vertical Stretch by 6

7) The parent function $y = |x|$ has been transformed by $s(x,y) = (3x, 8y)$

a) Write the equation for the image.

$\frac{y}{8} = \left|\frac{1}{3}x\right|$

b) Describe the transformation in words of the parent function mapped onto the image.

Horizontal Stretch by 3

Vertical Stretch by 8