Pick up the Warm Up

HW Questions

The Chapter 2 test is Friday

pdf

it's Friday

Warm Up

1a. Find both the x- and y- intercepts of $y = +x^2 - 2x - x(2x-4)$

$y = x^2 - 2x - 2x^2 + 4x$

$y = -x^2 + 2x$

y-intercept

set $x = 0$

$y = -(0)^2 + 2(0)$

$= 0$

$(0, 0)$

x-intercept

set $y = 0$

$-x^2 + 2x = 0$

factor out what is common

$x(-x + 2) = 0$

$x = 0$ $\quad -x + 2 = 0$

$x = 2$

$(0, 0)$ $(2, 0)$

b. Then find the vertex by averaging the x-intercepts (h, k)

$\frac{0+2}{2} = 1$ (1, 1) $f(1) = -(1)^2 + 2(1)$

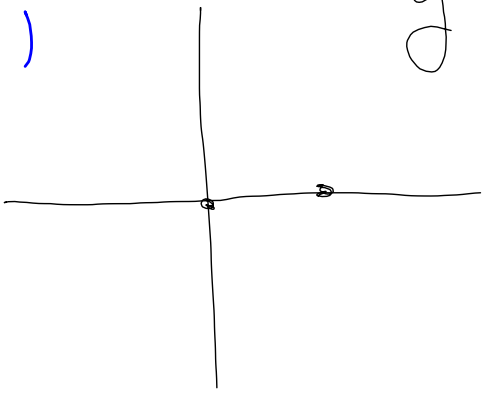
c. Then write the equation in graphing form ✓

V. Stretch factor is 1, negative orientation

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

d. what is locator point?

(1, 1)



(2) For $y = |x+1| - 3$ find the intercepts
the locator point
the domain
the range

y-int
set x=0

$y = |0+1| - 3$
$1 - 3$
$= -2$

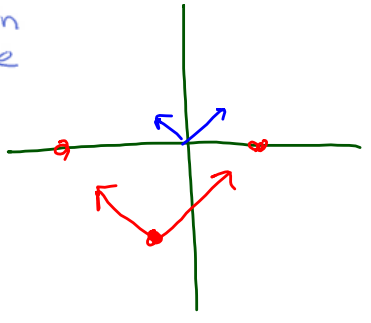
(0, -2)

x-int
set y=0

$|x+1| - 3 = 0$

$|x+1| = 3$

$x+1 = 3$ $\quad x+1 = -3$
$x = 2$ $\quad x = -4$



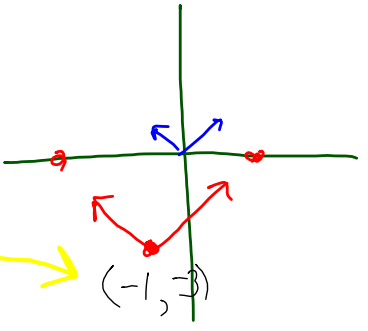
(-4, 0) (2, 0)

$$|x+1| - 3 = 0$$
$$+3 \quad +3$$
$$|x+1| = 3$$

$x+1 = 3$
$-1 \quad -1$
$x = 2$

$x+1 = -3$
$-1 \quad -1$
$x = -4$

the intercepts
the locator point
the domain
the range



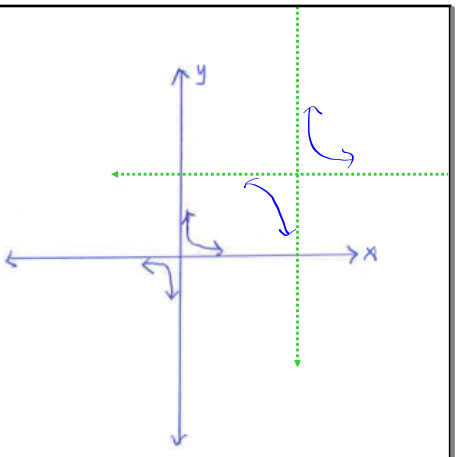
$-\infty < x < \infty$

$-3 \leq y < \infty$

$y = \frac{1}{x}$

(3) sketch $f(x) = \frac{1}{x-5} + 4$ with its asymptotes. Write the equation of each asymptote.

(HINT: What is the parent of $f(x)$?



Vert. Asym

horiz asymptote

(4) Suppose $g(x) = x^2 + 2x$

Create a function $f(x)$ that is created by translating $g(x)$ five units to the right.

$f(x) = (x-5)^2 + 2(x-5)$

12

x x

Questions on HW ?

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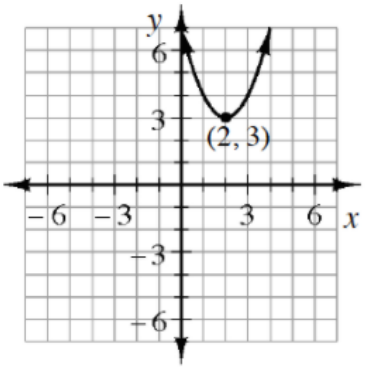
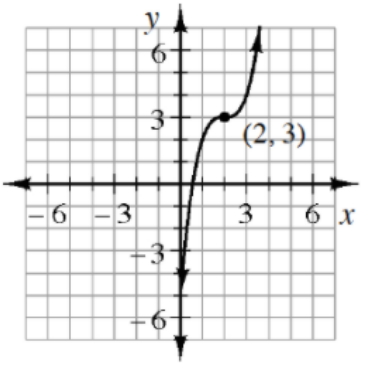
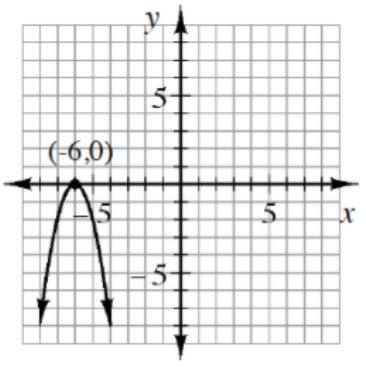
a.



b.



c.



107 c

2-111.

a. $5^{-2} \cdot 4^{1/2}$

b. $\dfrac{3xy^2z^{-2}}{(xy)^{-1}z^2}$

c. $(3m^2)^3(2mn)^{-1}(8n^3)^{2/3}$

d. $(5x^2y^3z)^{1/3}$

113@ $y = 2(x-17)^2$ Solve for x

(b) Solve for x

$$y + 7 = \sqrt[3]{x+5}$$

Test Information

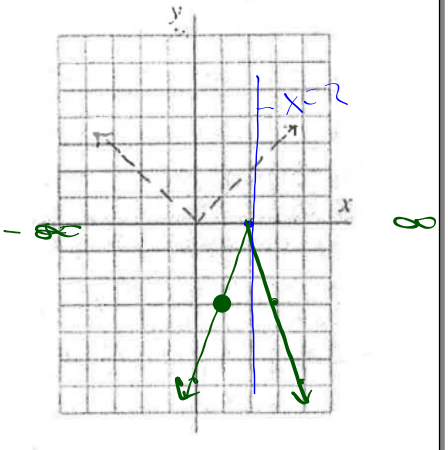
Analyze Transformations of Functions

(1) **Parent Graph Name:** Absolute Value

a) Parent Equation: $y = |x|$

b) Description of Transformation:
negative orientation with a vertical stretch of 3, translated 2 units to the right

c) Sketch Transformed Graph, $T(x)$
(Parent is already shown)



d) Write coordinates of the new locator point. (2, 0)

e) Write Transformation function, $T(x)$
$T(x) = -3|x-2|$

f) List domain of $T(x)$ $-\infty < x < \infty$ List range of $T(x)$ $-\infty < y \leq 0$

g) List equation(s) of any asymptotes of $T(x)$
none

h) Describe any symmetry
reflective symmetry about $x = 2$

(2) **Parent Graph Name:** Exponential Growth

a) Parent Equation: $y = 2^x$

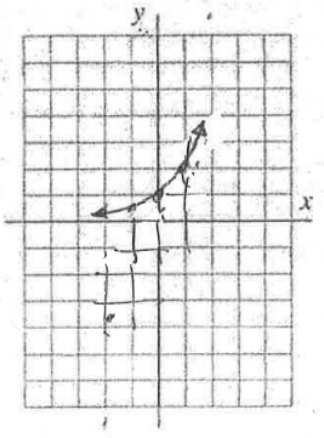
b) Description of Transformation:
Translate down 6 units

c) Sketch Transformed Graph, $T(x)$
(Parent is already shown)

d) Write coordinates of the new locator point. Use y-intercept.

e) Write Transformation function, $T(x)$

_____



f) List domain of $T(x)$ _____ List range of $T(x)$ _____

g) List equation(s) of any asymptotes of $T(x)$ h) Describe any symmetry

(3) **Parent Graph Name:** Cubic

a) Parent Equation:

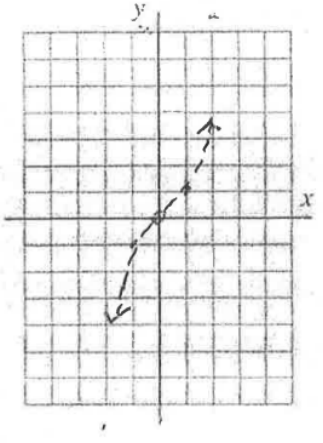
b) Description of Transformation:

c) Sketch Transformed Graph, $T(x)$
(Parent is already shown)

d) Write coordinates of the new locator point.

e) Write Transformation function, $T(x)$

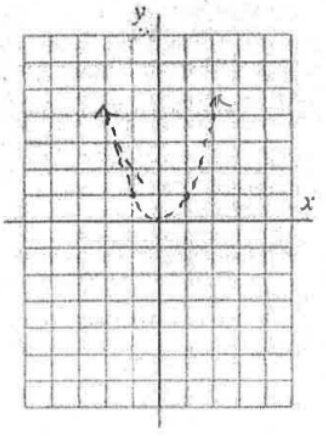
_____



f) List domain of $T(x)$ _____ List range of $T(x)$ _____

g) List equation(s) of any asymptotes of $T(x)$ h) Describe any symmetry

(4) **Parent Graph Name:** Parabola



h) Parent Equation:

i) Description of Transformation:

j) Sketch Transformed Graph, $T(x)$
(Parent is already shown)

k) Write coordinates of the new locator point.

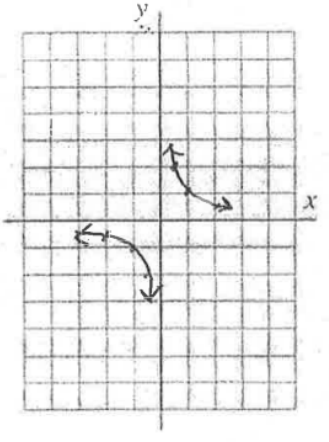
l) Write Transformation function, $T(x)$

_____

m) List domain of $T(x)$ _____ List range of $T(x)$ _____

n) List equation(s) of any asymptotes of $T(x)$ h) Describe any symmetry

(5) **Parent Graph Name:** Hyperbola (reciprocal)



o) Parent Equation:

p) Description of Transformation:
Translate 3 units right and 5 units up

q) Sketch Transformed Graph, $T(x)$

r) Write coordinates of the new locator point.

s) Write Transformation function, $T(x)$

_____

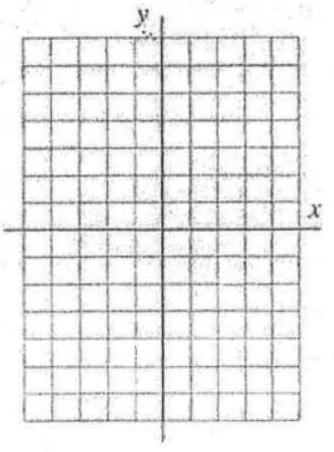
t) List domain of $T(x)$ _____ List range of $T(x)$ _____

u) List equation(s) of any asymptotes of $T(x)$ h) Describe any symmetry

(6) **Parent Graph Name:**

v) Parent Equation: $y = \frac{-1}{x^2}$

w) Description of Transformation:



x) Sketch Transformed Graph, $T(x)$
(Parent is already shown)

y) Write coordinates of the new locator point.

z) Write Transformation function, $T(x)$

_____

aa) List domain of $T(x)$ _____ List range of $T(x)$ _____

bb) List equation(s) of any asymptotes of $T(x)$

h) Describe any symmetry

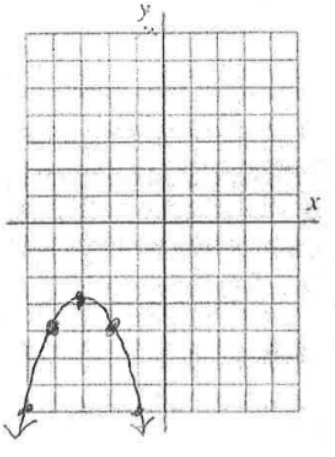
Work Backwards starting from graph

Name _____ per.___

(7) **Parent Graph Name:**

a) Parent Equation:

b) Description of Transformation:



c) Sketch Transformed Graph, $T(x)$
(Parent is already shown)

d) Write coordinates of the new locator point.

e) Write Transformation function, $T(x)$

_____

f) List domain of $T(x)$ _____ List range of $T(x)$ _____

g) List equation(s) of any asymptotes of $T(x)$

h) Describe any symmetry

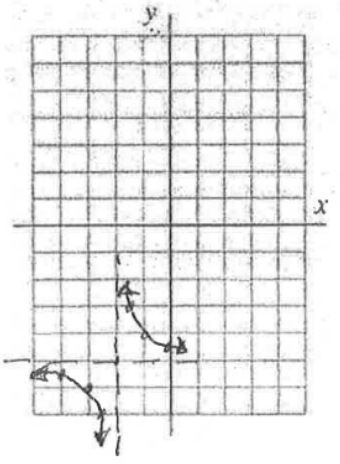
Work backwards

(8) **Parent Graph Name:**

h) Parent Equation:

i) Description of Transformation:

j) Sketch Transformed Graph, $T(x)$
(Parent is already shown)



k) Write coordinates of the new locator point.

l) Write Transformation function, $T(x)$

_____

m) List domain of $T(x)$ _____ List range of $T(x)$ _____

n) List equation(s) of any asymptotes of $T(x)$

h) Describe any symmetry

DIRECTIONS: Simplify the following expressions. The wor
complete the statement correctly.

1. $(3x^2)(10x^4)$

2.

Irena Sendler was born in ____, Poland in 1910.

a. $13x^8$ Krakow
b. $30x^8$ Lodz
c. $30x^6$ Warsaw