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)

x-intercept

set $y = 0$

$0 = -x^2 + 2x$

$0 = x(-x + 2)$

zero product

$x = 0$

$-x + 2 = 0$

$2 = x$

(2, 0) (0, 0)

b. Then find the vertex by averaging the x-intercepts

$\frac{0+2}{2} = 1$ $(1, \quad)$

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

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

$-1 + 2$

$= 1$

$(1)^2$ $(-1)^2$ (h, k)

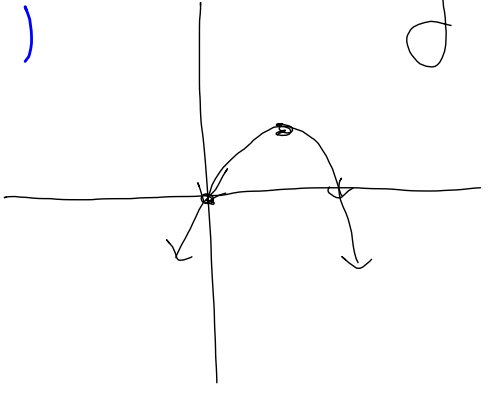
c. Then write the equation in graphing form ✓

V. Stretch factor is 1, negative orientation

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

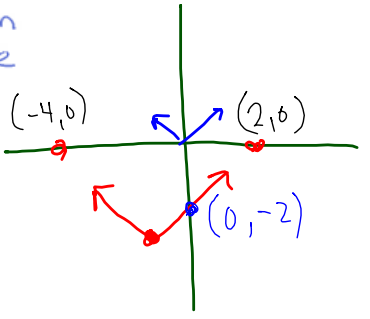
d. what is locator point?

$(1, 1)$



$y = |x|$

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



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

$= 1 - 3 = -2$

x-int set $y=0$ $|x+1| - 3 = 0$

$|x+1| = 3$

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

$x = 2$

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

$x = -4$

$|x+1| - 3 = 0$

$+3 \quad +3$

$|x+1| = 3$

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

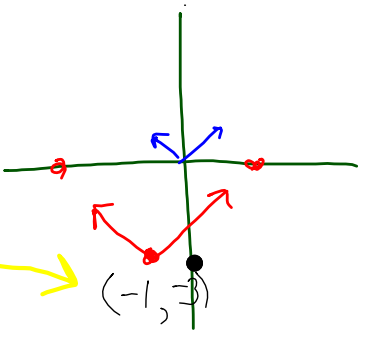
$x = 2$

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

$x = -4$

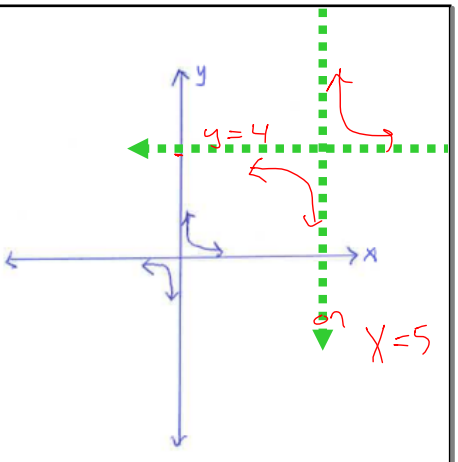
the intercepts
the locator point
the domain
the range

$-3 \leq y < \infty$



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

(HINT: What is the parent $y = \frac{1}{x}$ of $f(x)$?



(4) Suppose $g(x) = x^2 + 2x$ $\rightarrow$ $y = (x+1)^2 + 1$ ($x-5$)

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

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

$y = (x-6)^2 + 1$

x^2

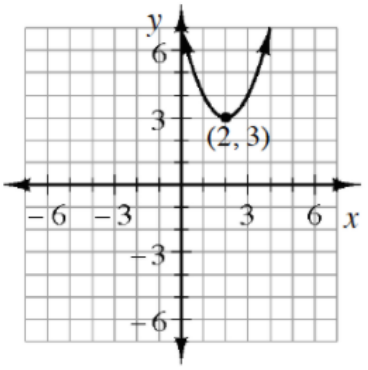
$(x-5)^2 + 2x$

$2(x-5)$

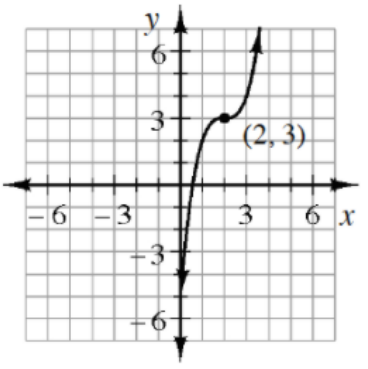
Questions on HW ?

107

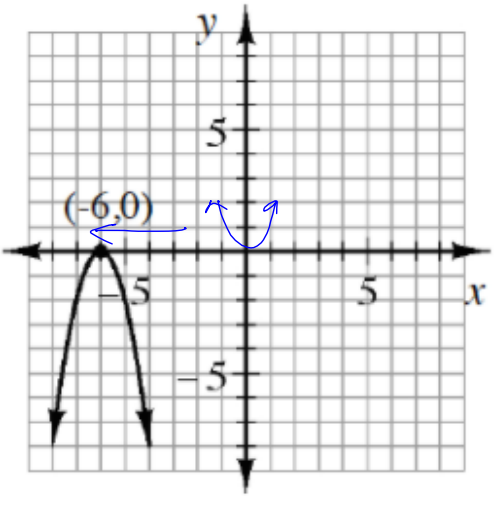
a.



b.



c.



$y = (x)^2$

$y = (x+6)^2$

$= -2(x+6)^2$

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

$(5x^2y^3z)^{\frac{1}{3}}$

$\sqrt[3]{5x^2y^3z}$

$\sqrt[3]{5} \cdot \sqrt[3]{x^2} \cdot \sqrt[3]{y^3} \cdot \sqrt[3]{z}$

y

$y\sqrt[3]{5x^2z}$

113 @ $\frac{y}{2} = \frac{2(x-17)^2}{2}$ Solve for x

$\sqrt{(x-17)^2} = \sqrt{\frac{y}{2}}$

$x - 17 = \pm\sqrt{\frac{y}{2}}$

$x = 17 \pm \sqrt{\frac{y}{2}}$

(b) Solve for x

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

Test Information

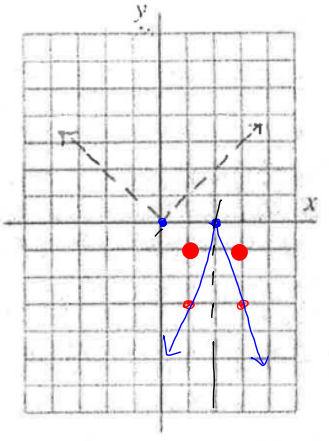
Analyze Transformations of Functions

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

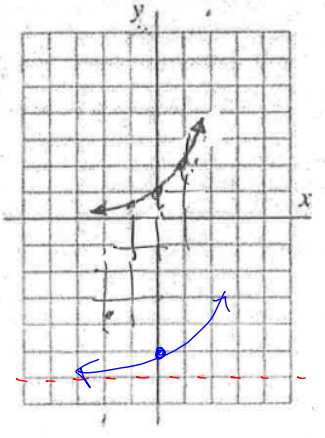
h) Describe any symmetry Vertical line of symmetry

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. (0, −5)

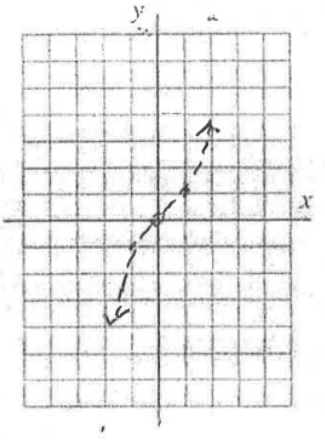
e) Write Transformation function, $T(x)$
$T(x) = 2^x - 6$

f) List domain of $T(x)$ $-\infty < x < \infty$ List range of $T(x)$ $-6 < y < \infty$

g) List equation(s) of any asymptotes of $T(x)$ $y = -6$

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, $T(x)$

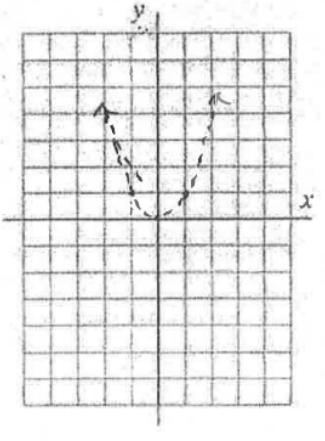
_____

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, $T(x)$

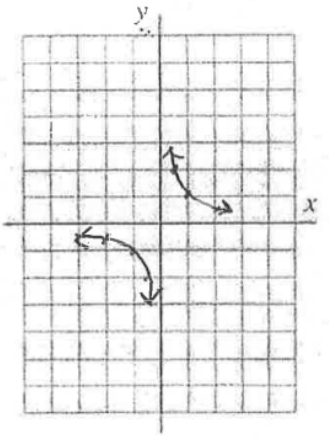
_____

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.

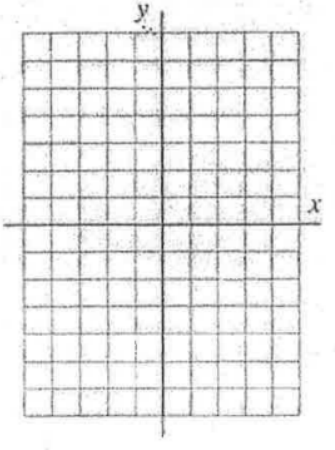
s) Write Transformation function, $T(x)$

_____

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, $T(x)$

_____

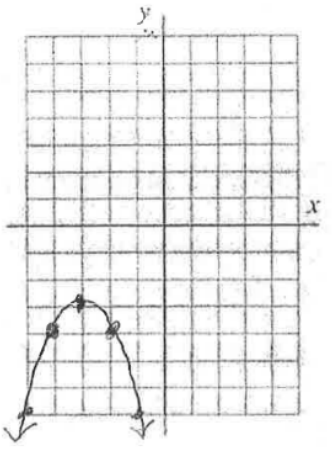
aa) List domain of $T(x)$ _____ List range of $T(x)$ _____

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, $T(x)$

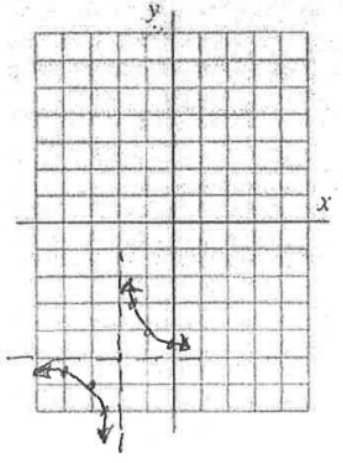
_____

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