

**Are there any Homework Questions you would like to see on the board?**

Last day's work: pp. 251-253 #(1,2)cd, 4c, 5cd, 10<sup>10a b</sup> [12 – 14]  
(Optional Wkst 4.6 Extra Practice)

Today's Homework Practice includes:

pp. 267-269 #(1 – 17)ace

Work Ahead to: p. 270 # 1 – 7

p. 251 5. Let  $f(x) = 4^x$ . For each function that follows,

- state the transformations that must be applied to  $f(x)$
- state the  $y$ -intercept and the equation of the asymptote
- sketch the new function
- state the domain and range

a)  $g(x) = 0.5f(-x) + 2$

b)  $h(x) = -f(0.25x + 1) - 1$

c)  $g(x) = -2f(2x - 6)$

d)  $h(x) = f(-0.5x + 1)$

c)  $g(x) = -2(4^{2x-6})$   
 $= -2(4^{2(x-3)}) + 0$

reflection in the  $x$ -axis

U.S. by a factor of 2

h.c. by a factor of  $\frac{1}{2}$

h.t. 3 units to the right

asymptote:  $y = 0$

let  $x = 0$ :  $y = -2(4^{2(0-3)})$   
 $= -2(4^{-6})$

$= -2(\frac{1}{4^6})$

$= -2(\frac{1}{4096})$

$= \frac{-1}{2048}$

D:  $\{x \in \mathbb{R}\}$

R:  $\{y \in \mathbb{R} \mid y < 0\}$

$g(x) = -2(4^{2(x-3)})$

$h(x) = 4^{-0.5x+1}$   
 $= 4^{-\frac{1}{2}(x-2)}$

reflection in the  $y$ -axis

h.s. by a factor of 2

h.t. 2 units right

HA:  $y = 0$

y.int:  $h(0) = 4^{-\frac{1}{2}(0-2)}$

$= 4^{-\frac{1}{2}(-2)}$

$= 4^1$

$= 4$

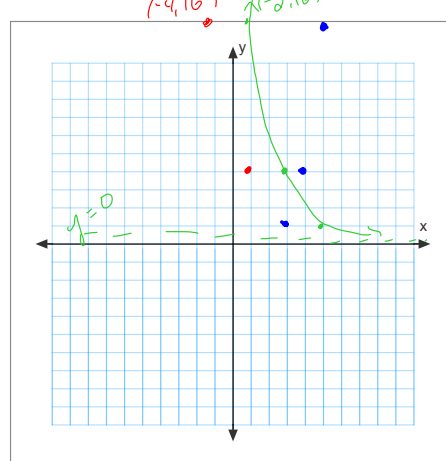
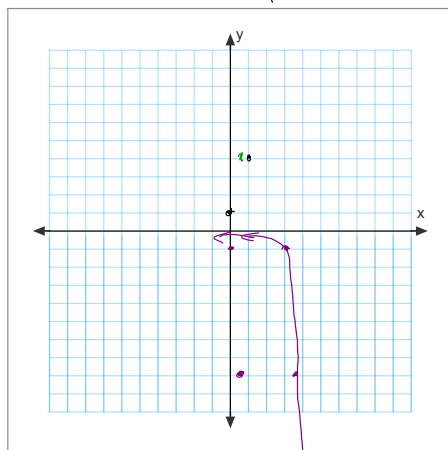
D:  $\{x \in \mathbb{R}\}$

R:  $\{y \in \mathbb{R} \mid y > 0\}$

$h(x) = 4^{-0.5x+1}$   
 $= 4^{-\frac{1}{2}(x-2)}$

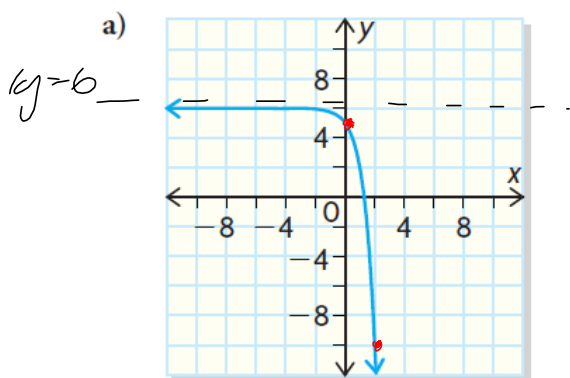
$(-4, 16)$

$(-2, 16)$

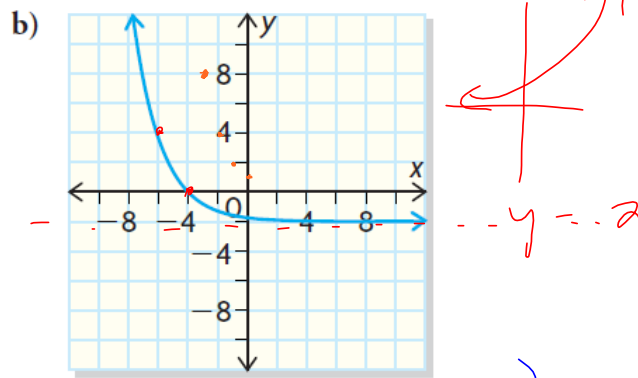


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10. Each graph represents a transformation of the function  $f(x) = 2^x$ . Write an equation for each one.



$$y = -2^x + 6$$



$$g(x) = 2^{-(x+)} - 2$$