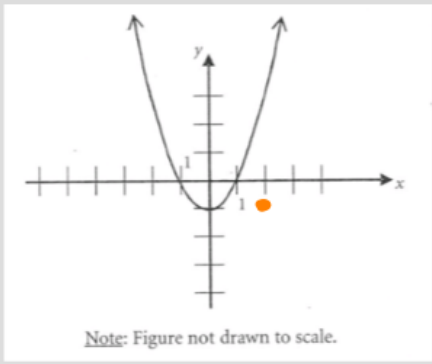
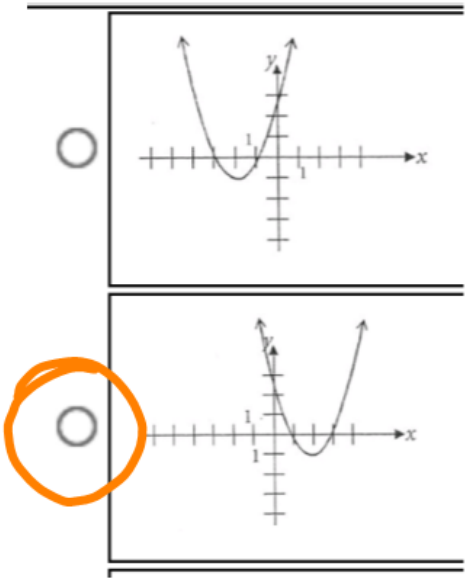


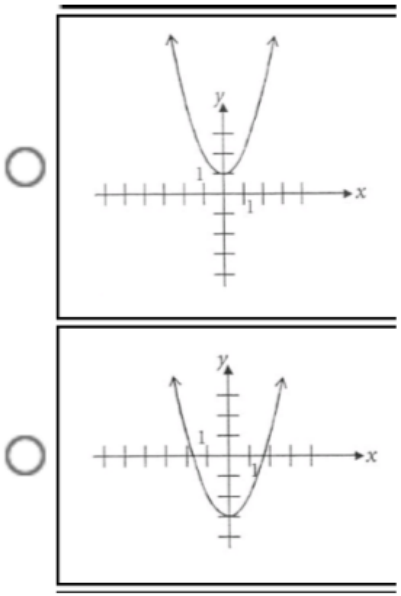
Note: Figure not drawn to scale.

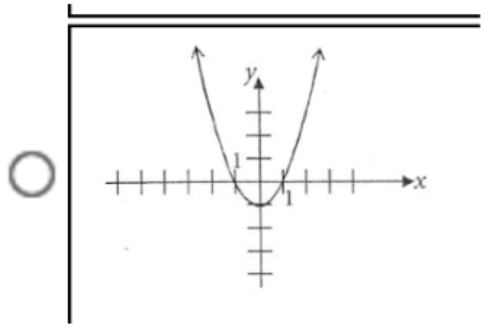
If the figure above is the graph of g(x), then which of the following is the graph of g(x−2)?

$g(x-2)$

$h=2$



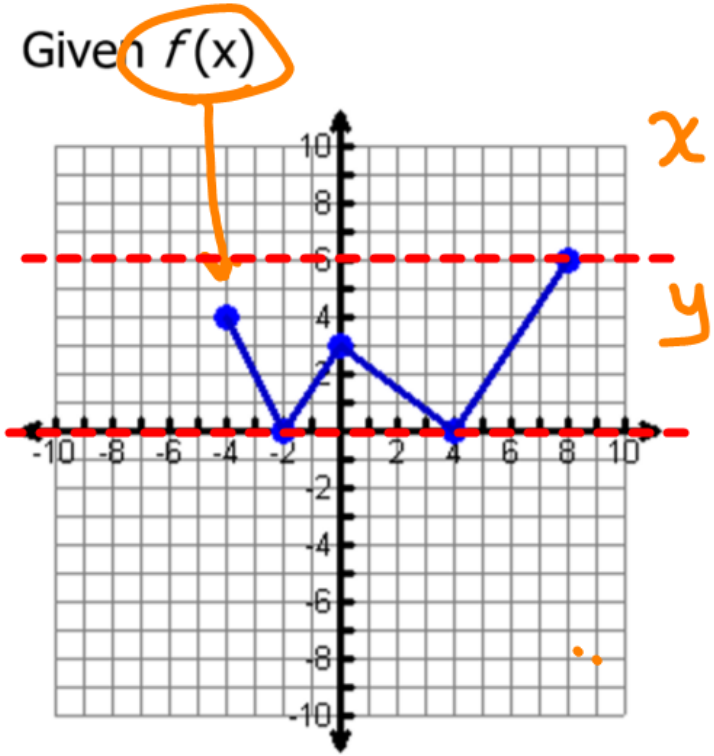




Notes: Transforming Functions

DR.
X Y

Given $f(x)$



x Domain: [-4, 8]

y Range: [0, 6]

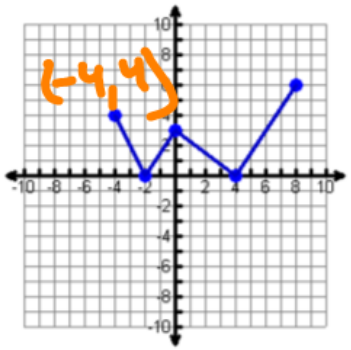
Zeros: $x = -2$, $x = 4$

For what value of x, does $f(x) = 6$? $x = 8$

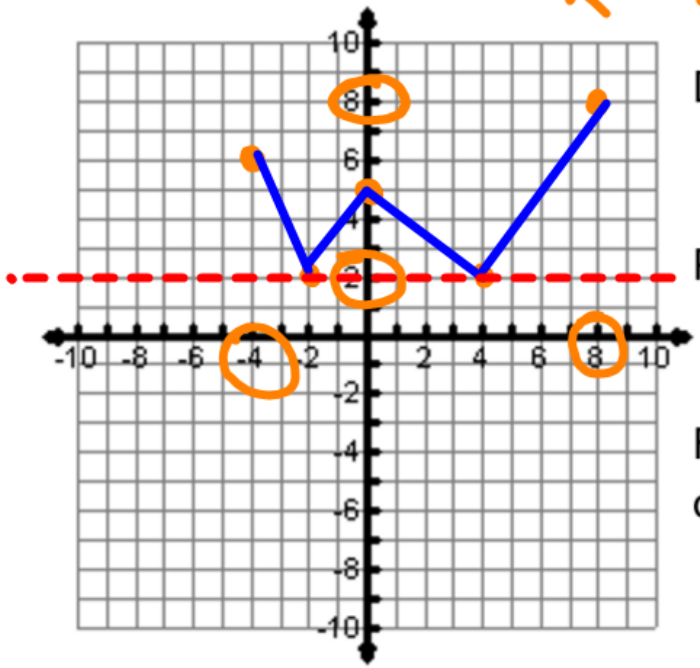
For what values of x, is $f(x) = 0$?

$x = -2$, $x = 4$

Given $f(x)$



1. $y = f(x) + 2$



$a = 1 \rightarrow$ stretch/shrink

$h = 0 \rightarrow$ Left (−) / Right (+)

$k = 2 \rightarrow$ Up (+) / Down (−)

Domain:

$[-4, 8]$

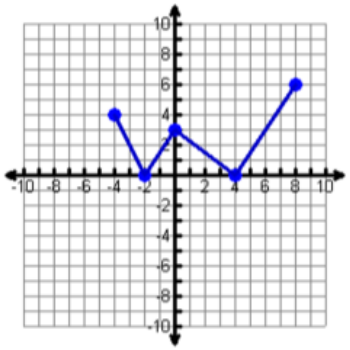
Range:

$[2, 8]$

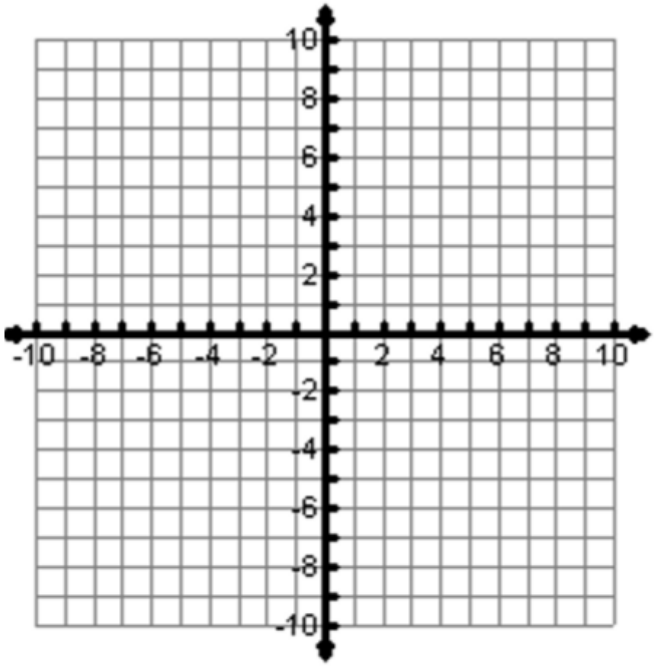
For what values of x is $y = 2$?

$x = -2, \quad x = 4$

Given $f(x)$



2. $y = f(x - 2)$

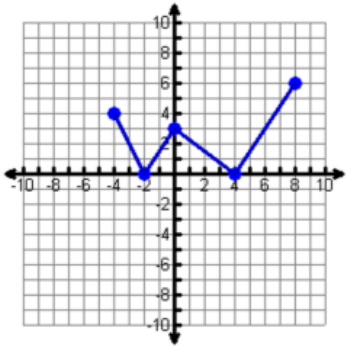


Domain:

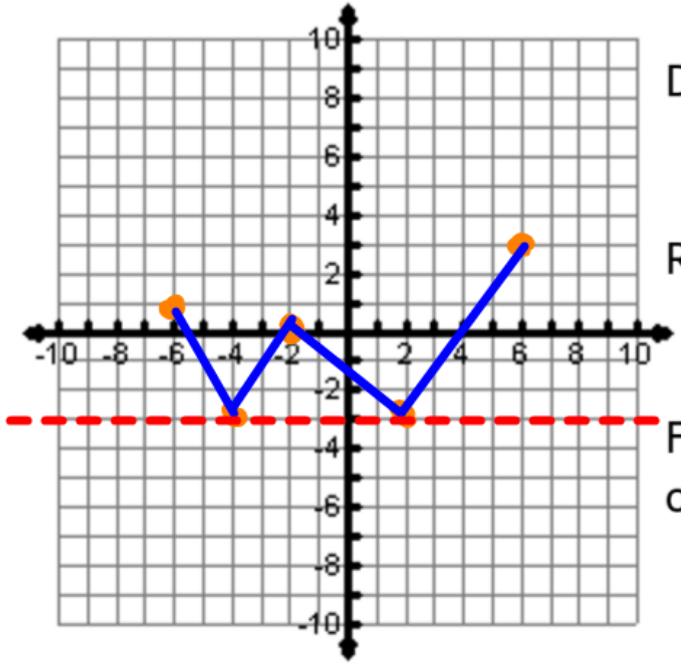
Range:

For what values of x is $y = 0$?

Given $f(x)$



3. $y = f(x + 2) - 3$



Domain: $[-6, 6]$

Range: $[-3, 3]$

For what values of x is $y = -3$?

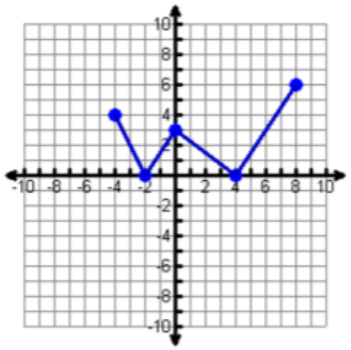
$x = -4, \; x = 2$

$a = 1$

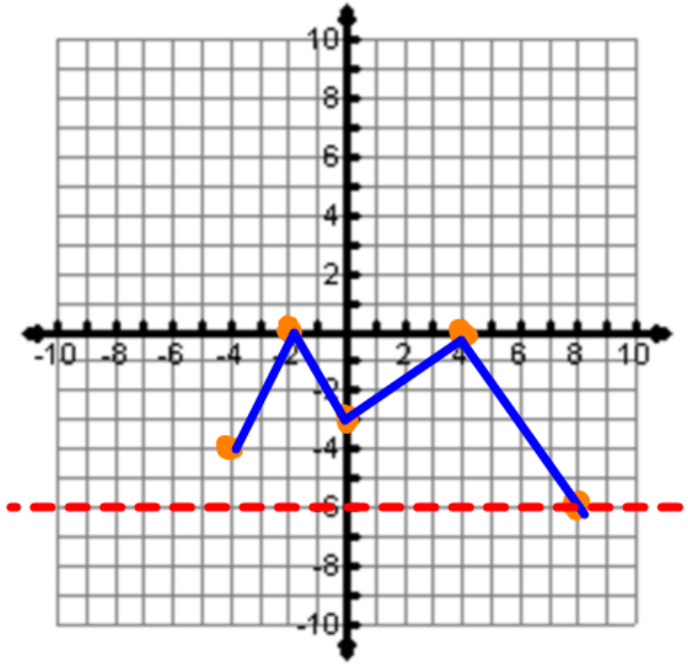
$h = -2$ Left 2

$k = -3$ Down 3

Given $f(x)$



4. $y = -f(x)$



flip

$a = -1$

$h = 0$

$k = 0$

Domain:

$[-4, 8]$

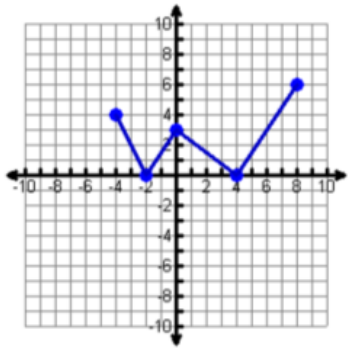
Range:

$[-6, 0]$

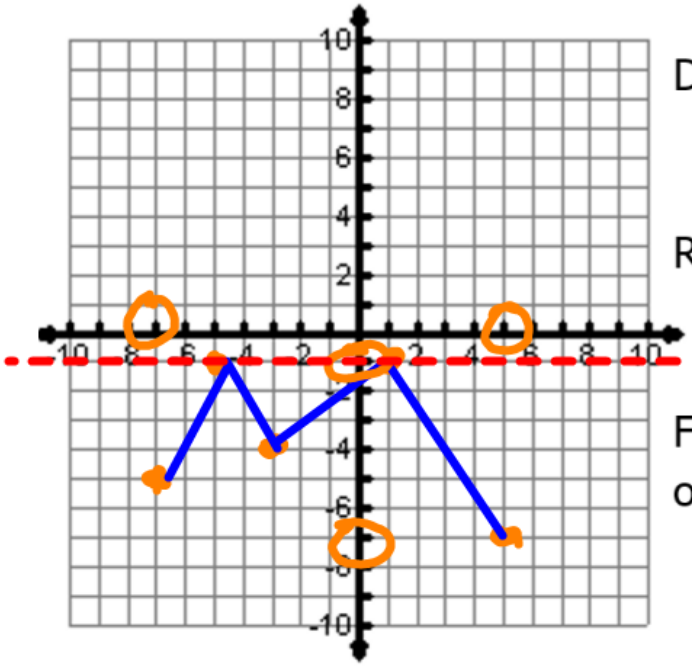
For what values of x is $y = -6$?

$x = 8$

Given $f(x)$



5. $y = -f(x+3) - 1$



① $a = -1$ flip

② $h = -3$ Left 3

$k = -1$ Down 1

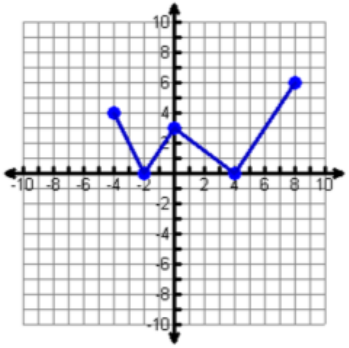
Domain: $[-7, 5]$

Range: $[-7, -1]$

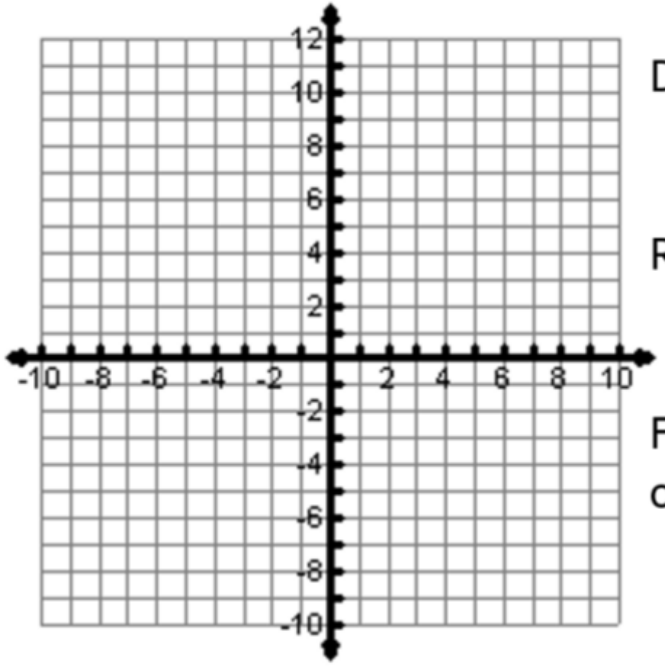
For what values of x is $y = -1$?

$x = -5, \; x = 1$

Given *f(x)*



6. $y = 2f(x)$

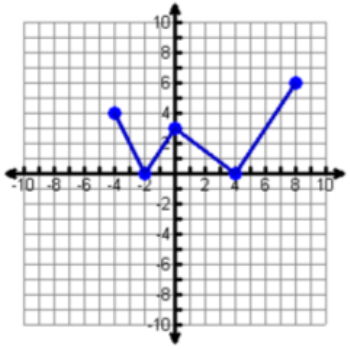


Domain:

Range:

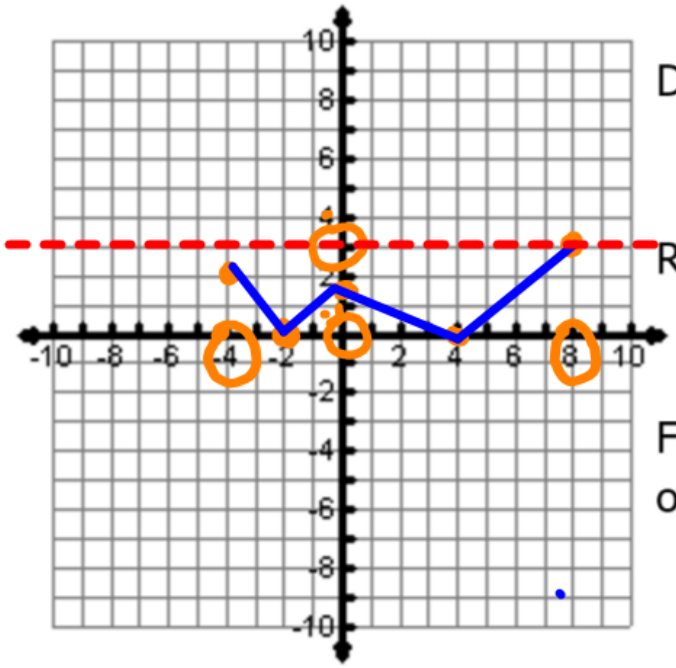
For what values of x is $y \leq -12$?

Given $f(x)$



$a = \frac{1}{2}$
$h = 0$
$k = 0$

7. $y = \frac{1}{2} f(x)$



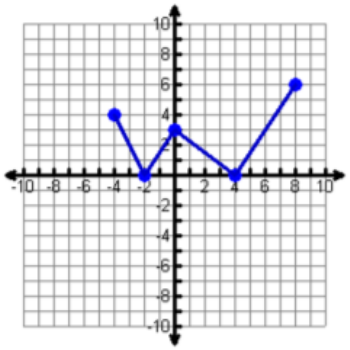
Domain: $[-4, 8]$

Range: $[0, 3]$

For what values of x is $y = 3$?

$x = 8$

Given $f(x)$

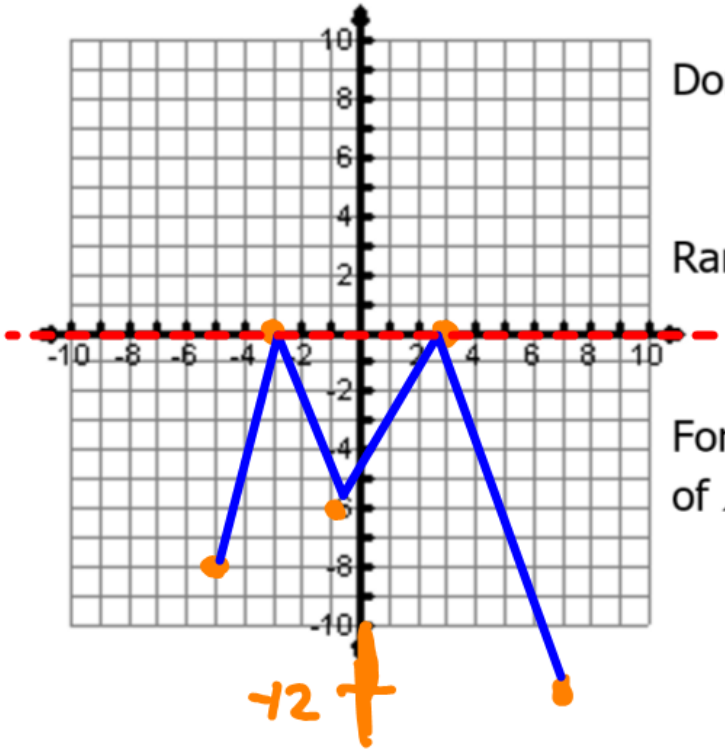


8. $y = -2f(x+1)$

flip/stretch $a = -2$

left 1 $h = -1$

$k = 0$



Domain: $[-5, 7]$

Range: $[-12, 0]$

For what values of x is $y = 0$?

$x = -3, \; x = 3$

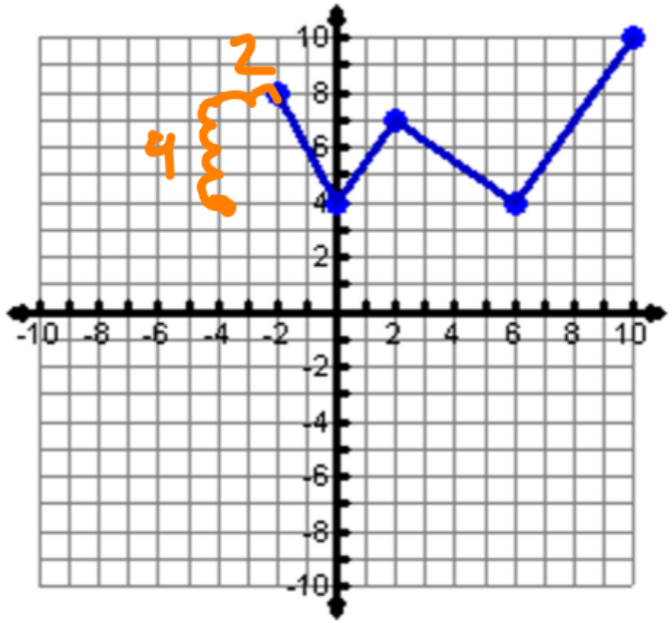
① Flip

② Stretch

③ Move

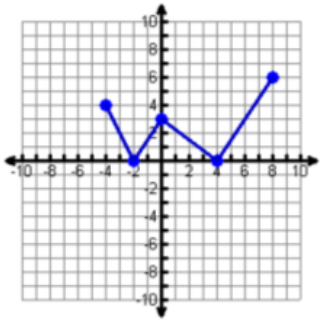
Write the equation of the transformation:

9. $y = f(x-2)+4$



$a = 1$

$h = 2$

$k = 4$

Given $f(x)$