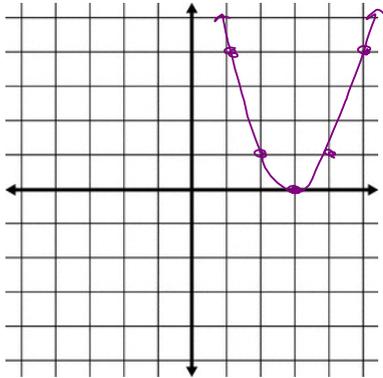
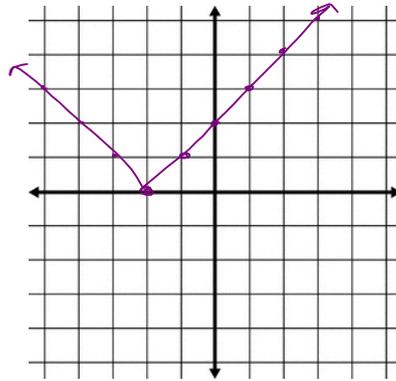


Reflections

ex 1) $f(x) = (x - 3)^2$

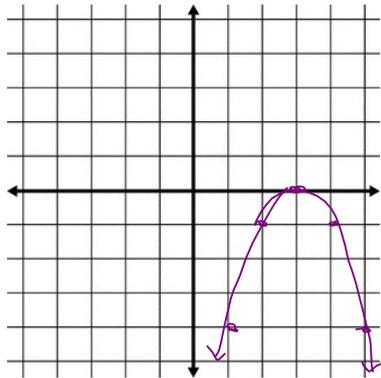


ex 2) $g(x) = |x + 2|$



1 a) Graph $-f(x)$ $y = -(x - 3)^2$

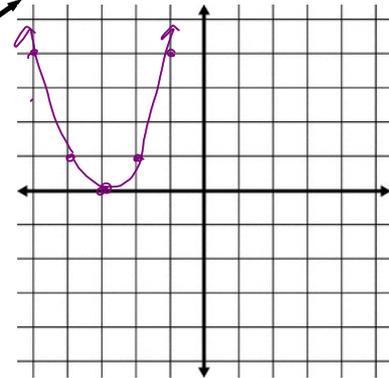
change
sign on all
y-values



This results in a reflection
over the x-axis

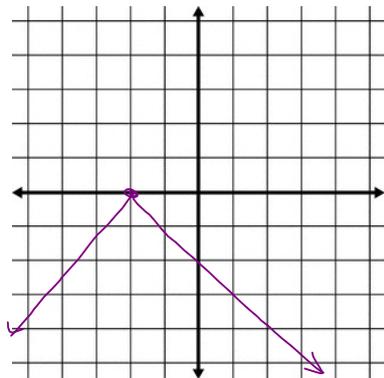
1 b) Graph $f(-x)$ $y = (-x - 3)^2$

change
sign on all
x-values

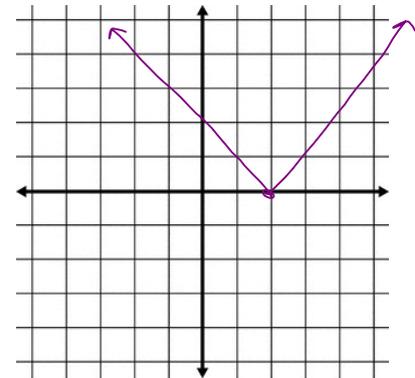


This results in a reflection
over the y-axis

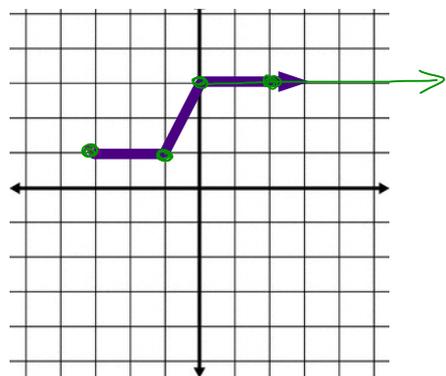
2 a) Graph $-g(x)$ $y = -|x + 2|$



2 b) Graph $g(-x)$ $y = |-(x + 2)|$



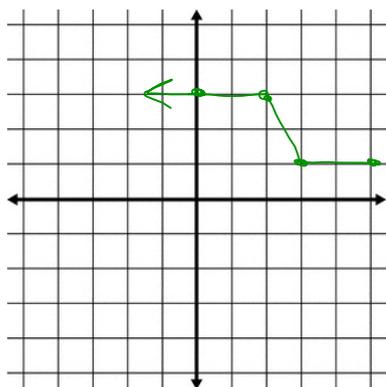
ex 3) Given $f(x)$ graphed below:



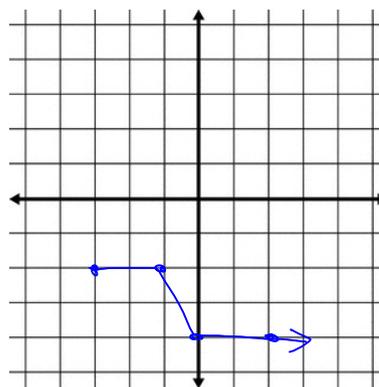
$(x, y) \rightarrow (-x+2, y)$	$(x, -y-1)$
$(-3, 1) \rightarrow (5, 1)$	$(-3, -2)$
$(-1, 1) \rightarrow (3, 1)$	$(-1, -2)$
$(0, 3) \rightarrow (2, 3)$	$(0, -4)$
$(2, 3) \rightarrow (0, 3)$	$(2, -4)$

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

a) Sketch $y = f(-x + 2)$



b) Sketch $y = -f(x) - 1$



ex 4) The function $y = f(x)$ has the domain $-1 \leq x \leq 4$ and range $2 \leq y \leq 7$. What are the domain and range of each function:

a) $y = -f(x)$
reflect \updownarrow

$D: -1 \leq x \leq 4$
 $R: -7 \leq y \leq -2$

b) $y = f(-x)$
reflect \leftrightarrow

$D: -4 \leq x \leq 1$
 $R: 2 \leq y \leq 7$

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