Graphing $f(x)=a(x-h)^2+k$ 3.4 2days

Warm Up. Use p. 144 for problems.

Even function - if $f(-x)=f(x)$ (the graph is symmetric about the y-axis)

Odd function - if $f(-x)=-f(x)$ (the graph is symmetric about the origin) (if you can rotate 180° & land back on itself)

Vertex form of a Quadratic $f(x)=a(x-h)^2+k$ Vertex (h,k)

Ex 1. Determine whether each function is even, odd or neither.

a) $f(x)=3x$

* Substitute $-x$ in for x & simplify

$=3(-x)=-3x$

Since this is the opposite of the origonal it is ODD

b) $g(x)=2x^2-6$

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

Since this is the same as the origonal it is EVEN

c) $h(x)=3x^2-2x+4$

$3(-x)^2-2(-x)+4$

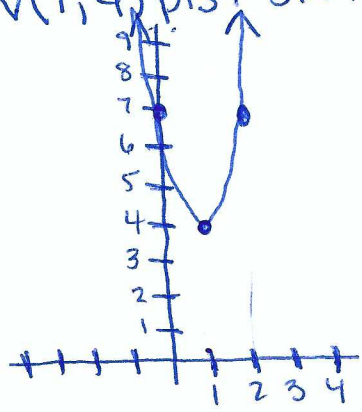
$3x^2+2x+4$

the middle term changed signs but the others did not so its NEITHER

Ex 2. Graph the function. Compare the graph to $f(x)=x^2$

a) $g(x)=3(x-1)^2+4$

V(1,4) pts↑ skinny

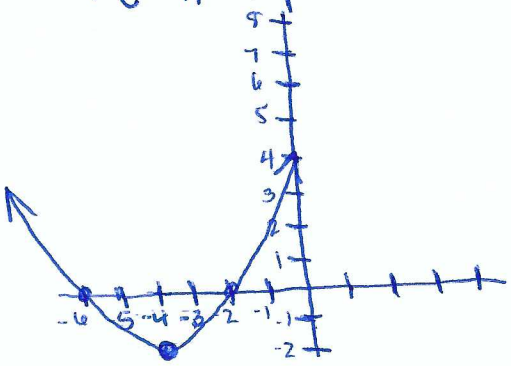


*plug in $x=0$ & $x=2$

(0,7) (2,7)

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

V(-4,-2) pts↑ wide

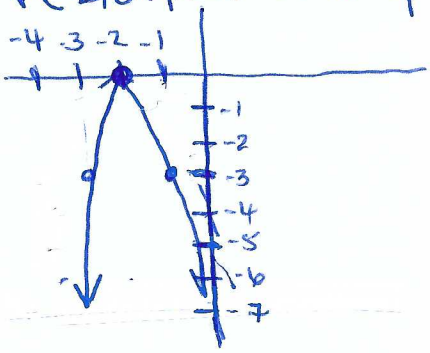


*plug in $x=-6$ & -2

(-6,0) (-2,0)

c) $g(x)=-3(x+2)^2$

V(-2,0) pts↓ Skinny



*plug in $x=-3$ & -1

(-3,-3) (-1,-3)

HW 3.4A p. 150 5,6,8, 19-27 odd, 31,32,35-41

Day 2. Do #45-49 p. 151 together in class

HW 3.4B p. 150 24,28,40,42,52,53,57-61 odd, 70

* Can skip Even/ODD NOTES & #5,6,8 (1st day from)