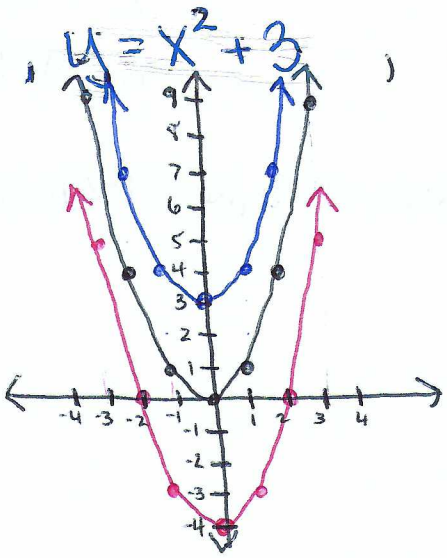
Graphing $f(x)=ax^2+c$

3.2 1day

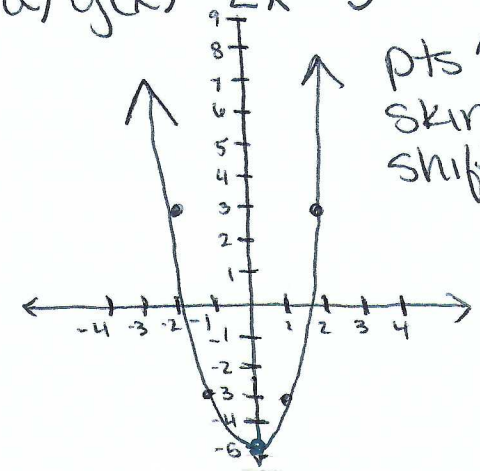
Graphing: $f(x)=ax^2+c$ is the same graph as $y=ax^2$ just shifted $\uparrow c$ units

Ex 1. Graph $y=x^2$, $y=x^2+3$, $y=x^2-4$ on the same graph



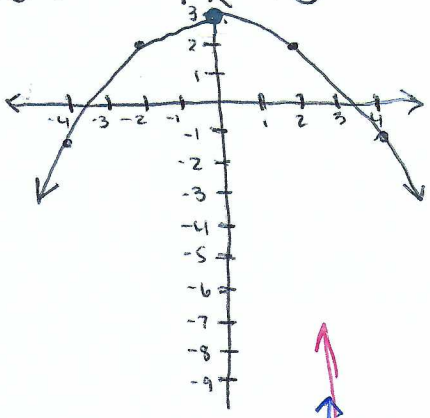
Ex 2. Graph & compare to $f(x)=x^2$

a) $g(x)=2x^2-5$



pts ↑ skinnier shifted ↓5

b) $h(x)=-\frac{1}{4}x^2+3$

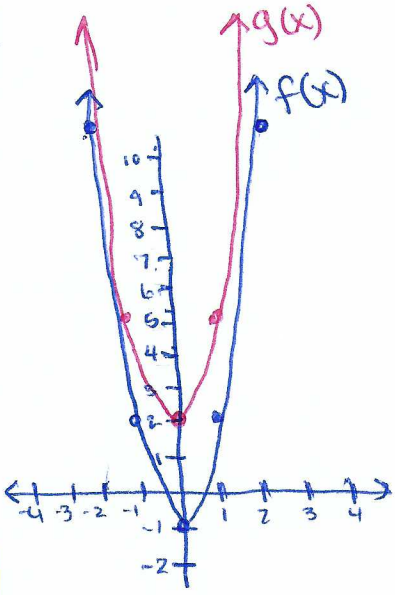


pts ↓ wider shifted ↑3

Ex 3. Let $f(x)=3x^2-1$ & $g(x)=f(x)+3$

a) Describe the transformation from f to g. Then graph f & g.

b) Write an eqn. that represents g in terms of x



a) shifts $f(x)$ up 3

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

$\boxed{g(x)=3x^2+2}$

x	-2	-1	0	1	2
f(x)	11	2	-1	2	11
g(x)	14	5	2	5	14

Ex 4. Find the zeros of the function

a) $y = x^2 - 36$

$0 = x^2 - 36$

$36 = x^2$

$\pm 6 = x$

b) $f(x) = -x^2 + 49$

$0 = -x^2 + 49$

$x^2 = 49$

$x = \pm 7$

3.2 HW p. 133 1-3, 6, 9, 12, 13, 16, 19-27 odd, 29, 30