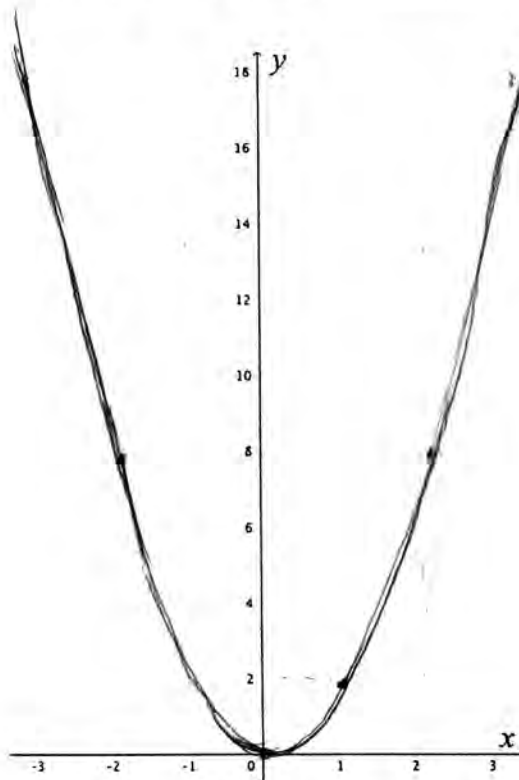


Exercise 10

1. Plot the following points for the quadratic equation,  $y = 2x^2$ . Then connect the dots smoothly.

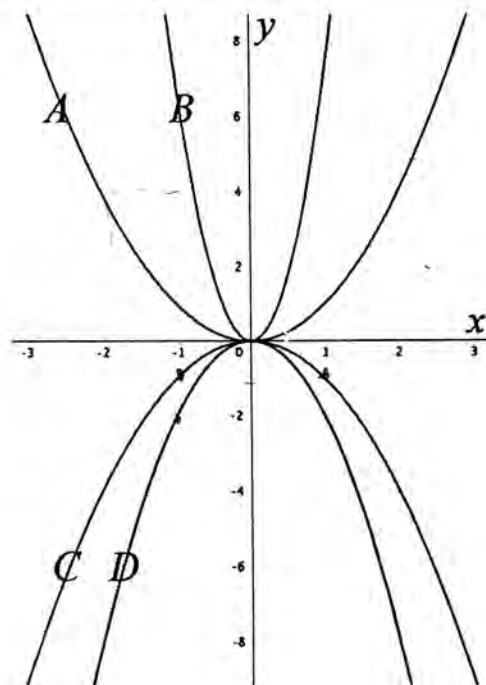
$y = 2x^2$

$y = 2x^2$	
x	y
0	0
1	2
-1	2
2	8
-2	8
3	18
-3	18



2. Identify which equation goes with which graph.

	Choose, A, B, C, or D. Refer to the graph.
$y = 7x^2$ happy	B
$y = x^2$ happy	A
$y = -x^2$ sad	C
$y = -2x^2$ sad	D



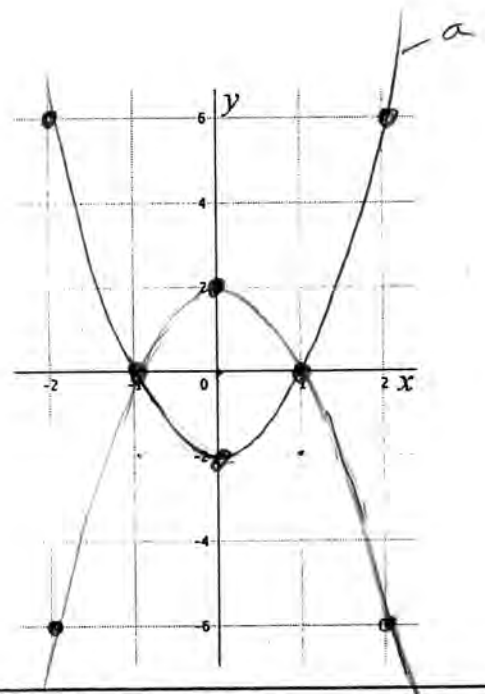
3. Graph the following two quadratic equations on the graph.

a.  $y = 2x^2 - 2$

b.  $y = -2x^2 + 2$

x	y
0	-2
$\pm 1$	0
$\pm 2$	6

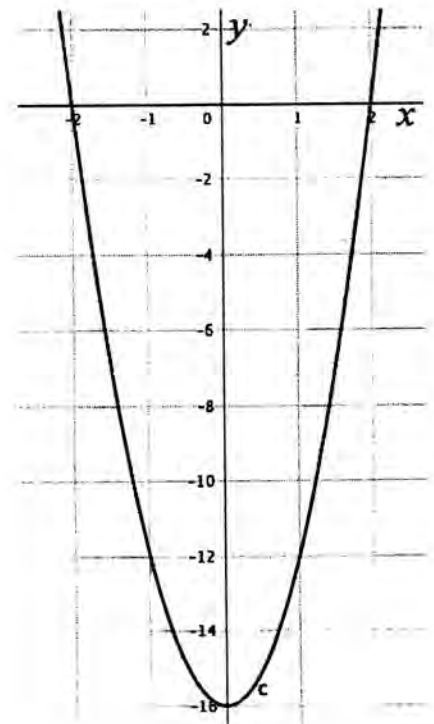
x	y
0	2
$\pm 1$	0
$\pm 2$	-6




Just like in linear equations, you find the *y-intercepts* by setting  $x = 0$ .

Find the *y-intercepts* for the following.  
Just solve for  $x = 0$ . Easy.

E.g. $y = 3.5x^2 - 8$	<i>y-intercept</i> is $-8$
1. $y = 4x^2 - 16$	$-16$
2. $y = x^2 + 16.3$	$16.3$
3. $y = -3.5x^2 - 8$	$-8$
4. $y = 0.002x^2 + 7$	$7$
5. $y = x^2$	$0$



Find the *x* and *y-intercepts* for the following.  
The *x-intercepts* are much trickier.  
You set  $y = 0$  and solve for  $x$ .

	<i>x-intercepts</i>	<i>y-intercept</i>	<i>Happy or Sad</i>
E.g. $y = 4x^2 - 16$	<i>x-intercept</i> is $-2$ and $+2$ .	$-16$	Happy 0 0 
$0 = 4x^2 - 16$			
$16 = 4x^2$			
$x^2 = 4$			
$x = \pm 2$	See the graph to the right.		Because the $x^2$ term is positive.
6. $y = x^2 - 4$ $x^2 = 4$	$\pm 2$	$-4$	Happy
7. $y = -x^2 + 4$	$\pm 2$	$4$	Sad
8. $y = -3x^2 + 27$	$\pm 3$	$27$	Sad
9. $y = 2x^2 - 18$	$\pm 3$	$-18$	Happy
10. $y = x^2$	$0$	$0$	Happy