

$$\textcircled{1} y = -3(x+4)^2 + 9$$

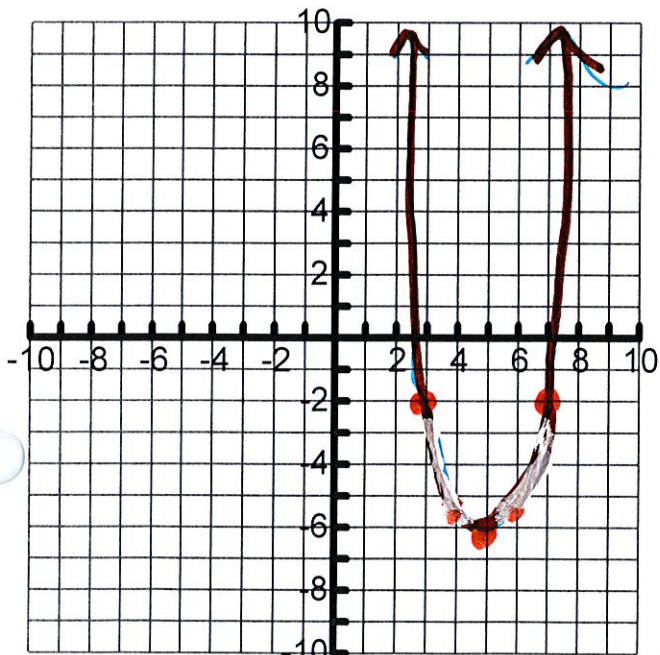
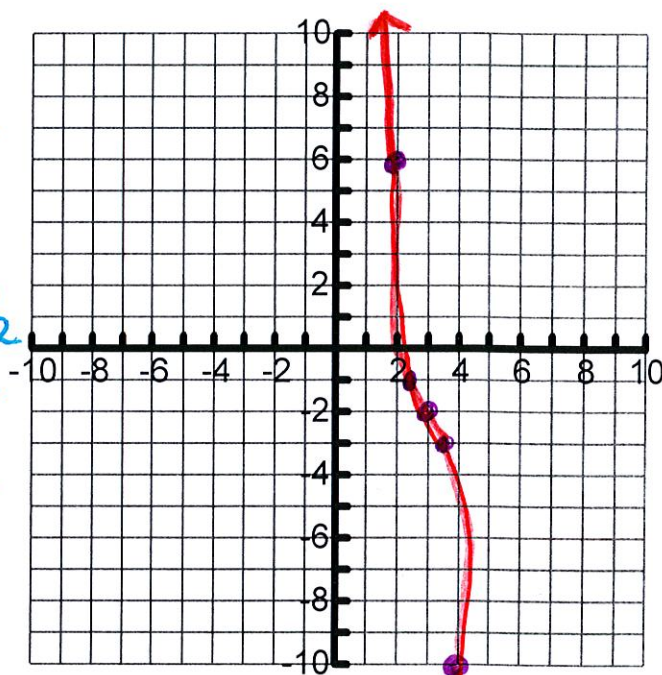
x	y
-6	3
-5	6
-4	9
-3	6
-2	3

- \* reflect over the x-axis
- \* vertical stretch by 2
- \* shift left + 4 and up 9

$$\textcircled{2} y = (-2(x-3))^3 - 2$$

x	y
4	-10
3½	-3
3	-2
2½	-1
2	6

- \* reflect over the y-axis
- \* horizontal compress by ½
- \* shift right 3 + down 2



$$\textcircled{3} y = \frac{1}{4}(x-5)^4 - 6$$

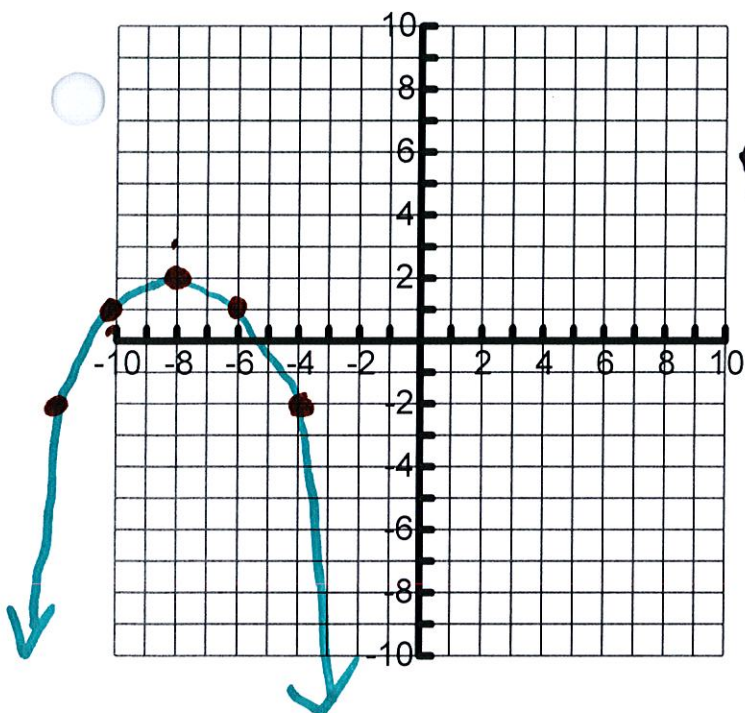
x	y
3	-2
4	-5¾
5	-6
6	-5¾
7	-2

- \* vertical compress by ¼
- \* shift right 5 + down 6

$$y = -\left(\frac{1}{2}x + 4\right)^2 + 2$$

$$y = -\left(\frac{1}{2}(x+8)\right)^2 + 2$$

rewrite

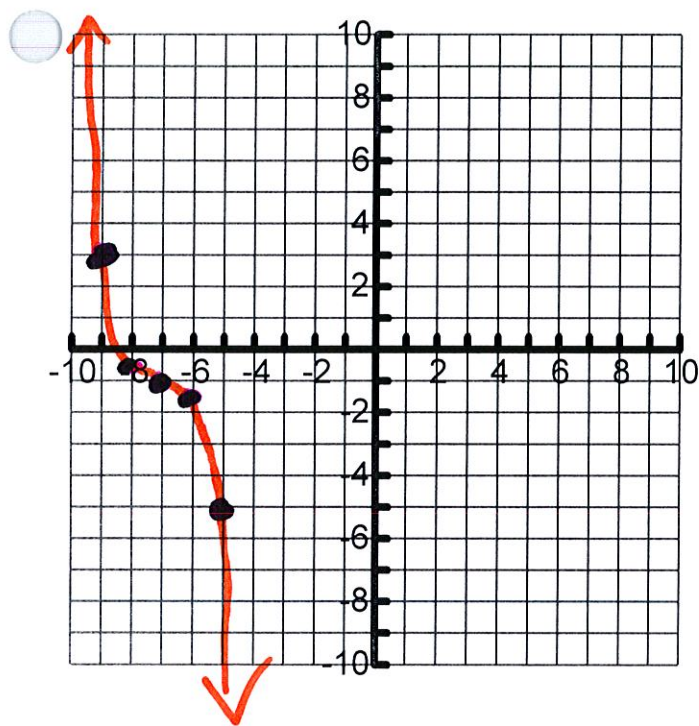


x	y
-12	-2
-10	+1
-8	2
-6	1
-4	-2

\* reflect over the x-axis

\* horizontal stretch by 2

\* shift left 8 + up 2



$$y = \frac{1}{2}(- (x+7))^3 - 1$$

x	y
-5	-5
-6	-1 1/2
-7	-1
-8	-1/2
-9	3

\* reflect over the y-axis

\* vertical compress by 1/2

\* shift left 7 + down 1