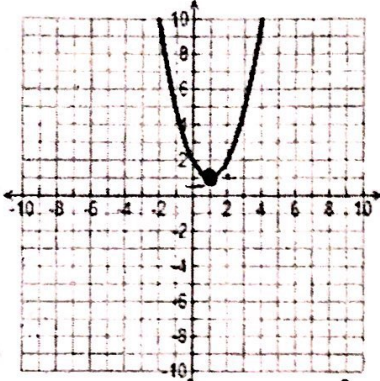


Writing Quadratic Equations from Graphs Notes

Write the equation in vertex form from the given graph: $y = a(x-h)^2 + k$

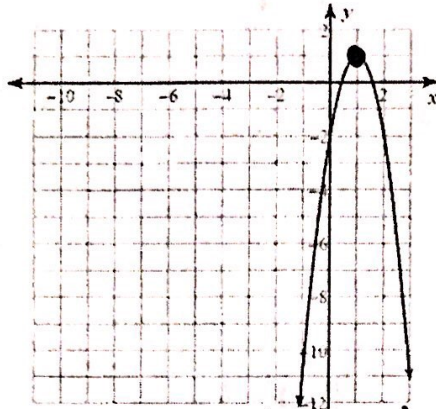
- Find vertex / Find all transformations [left/right, up/down]
- Stretch / Shrink & face up / face down

inside opposite



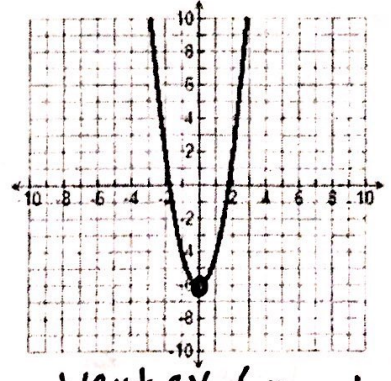
vertex (1, 1)

$$y = (x-1)^2 + 1$$



vertex (1, 1)

$$y = -3(x-1)^2 + 1$$



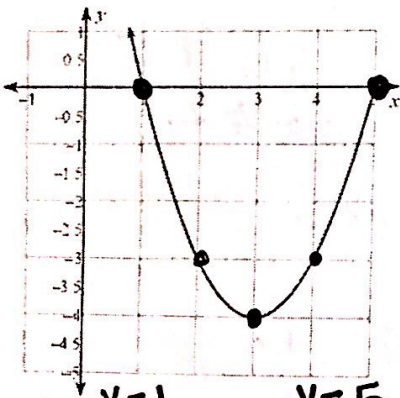
vertex (0, -6)

$$y = 2x^2 - 6$$

Write the equation in Intercept form for the given graph: $y = a(x-p)(x-q)$

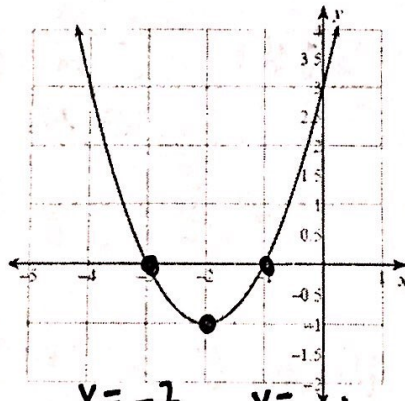
- Find x-intercepts, write as factors
- Stretch / Shrink & face up / face down

factors are opposite sign of x-intercepts



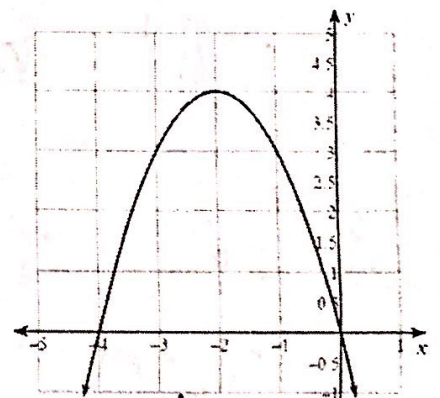
x=1 x=5

$$y = (x-1)(x-5)$$



x=-3 x=-1

$$y = (x+3)(x+1)$$



x=-4 x=0

(x+4)x

$$y = -x(x+4)$$

Don't forget All Quadratics
follow the pattern:

over 1 (from vertex) up 1

over 2 up 4

over 3 up 9

over 4 up 16

over 5 up 25

* If they don't whatever you
go over 1, & up or down _____

will be your stretch / shrink.
> 1 α # < 1

* Faces up $a =$ positive

Faces down $a =$ negative