

Intercept form is written $y = a(x-p)(x-q)$ where p & q are the zeros, solutions or x-intercepts of the function.

Find the zeros (x-intercepts) $x=p$ $x=q$ are the x-intercepts

- Set each of your factors equal to zero and solve for x.

1) $Y = (x-3)(x+2)$

$x=3$ $x=-2$

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

$x=-4$ $x=4$

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

$x=0$ $x=1$

$2x=0$
 $\frac{2x}{2} = \frac{0}{2}$
 $x=0$

Use the zeros to find the vertex and axis of symmetry.

- Find the zeros (did above)
- The x value of the vertex will be half way between the zeros or the midpoint. Average your zeros to find the x value of the vertex.
- Plug the x value into the equation to get the y-value of the vertex.
- State the vertex and AOS

X-value of vertex:
Add the 2 x-intercept & \div by 2

1) $Y = (x-3)(x+2)$

$x=3$ $x=-2$
 $3+(-2) = \frac{1}{2} = .5$ or $\frac{1}{2}$
Vertex $(\frac{1}{2}, -6.25)$ AOS $x = \frac{1}{2}$

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

$x=-4$ $x=4$
 $-4+4 = \frac{0}{2} = 0$
Vertex $(0, -16)$ AOS $x=0$

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

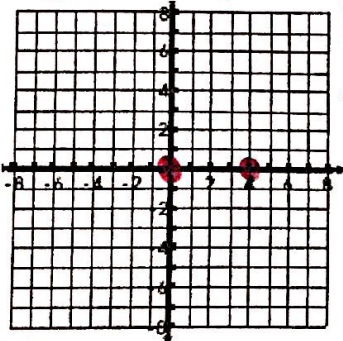
$x=0$ $x=1$
 $0+1 = \frac{1}{2} = .5$
Vertex $(.5, -.5)$ AOS $x = .5$

Graph.

- Find the vertex from above
- Make a table of values (using table function in the calculator)
- Plot the points

1) $Y = x(x-4)$

$x=0$ $x=4$



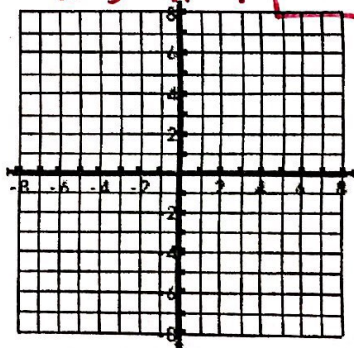
Vertex:
 $0+4 = \frac{4}{2} = 2$

Table:

x	y
0	0
1	-3
2	-4
3	-3
4	0

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

$x=3$ $x=-1$



Vertex:
 $3+(-1) = \frac{2}{2} = 1$

x	y
-1	0
0	-3
1	-4
2	-3
3	0