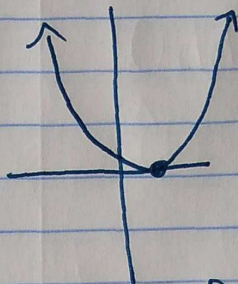


$$y = (x-1)^2$$



When you have a factor square it will hit the x-axis and bounce back, rather than crossing through

$$y = 2(x+1)(x-2)(x+8)$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ x+1=0 & x-2=0 & x+8=0 \\ \frac{-1 \quad -1}{x=-1} & \frac{+2 \quad +2}{x=2} & \frac{-8 \quad -8}{x=-8} \end{array}$$

$(-1, 0)$     $(2, 0)$     $(-8, 0)$

1. Find roots (x-intercept)

2. Find y-intercept (x=0)

$$y = 2(0+1)(0-2)(0+8)$$

$$y = 2(1)(-2)(8)$$

$$y = -32$$

$(0, -32) *$

3. Determine end behavior and orientation

orientation = positive  
Degree 3 = odd

$$x \rightarrow \infty, f(x) \rightarrow \infty$$

$$x \rightarrow -\infty, f(x) \rightarrow -\infty$$

4. Graph

check on calculator - maximum and minimum

