

1. $f(x) = (x + 3)(x - 1)(x - 6)^2$

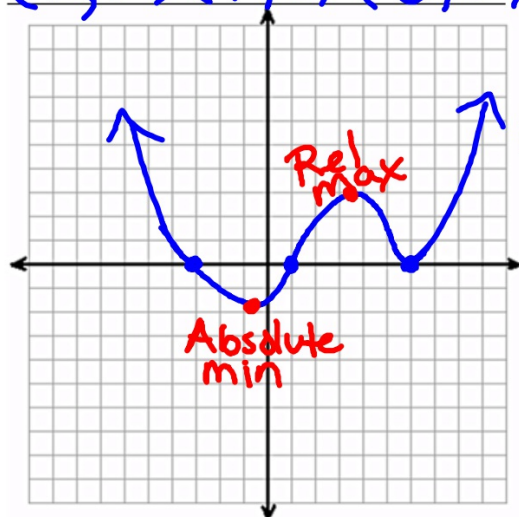
Degree: 4

End Behavior: Even Pos

x-intercepts (with multiplicity):

$(-3, 0)(1, 0)(6, 0)(6, 0)$

$(x+3)(x-1)(x-6)(x-6)$



$x=6$ has
a multiplicity
of 2.

$f(x) = x^3 + 8x^2 + 9x - 18$ if $(x + 3)$ is a factor.

Degree: 3

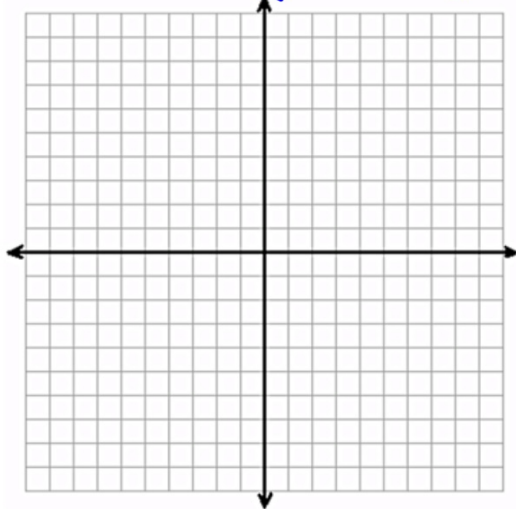
End Behavior: ODD Pos

x-intercepts (with multiplicity):

$(-3, 0)$ $(-6, 0)$ $(1, 0)$

y-intercept:

$(0, -18)$



$$\begin{array}{r} -3 \overline{) 1 \ 8 \ 9 \ -18} \\ \underline{+ \ 3 \ + \ 15 \ + \ 18} \\ 1 \ 5 \ -6 \ 0 \end{array}$$

Quad Linear Constant Remainder

$$f(x) = (x+3)(x^2 + 5x - 6)$$

$$\begin{array}{r} -6 \\ 6 \times 5 \end{array}$$

$$f(x) = (x+3)(x+6)(x-1)$$