

Polynomial Graphing Practice

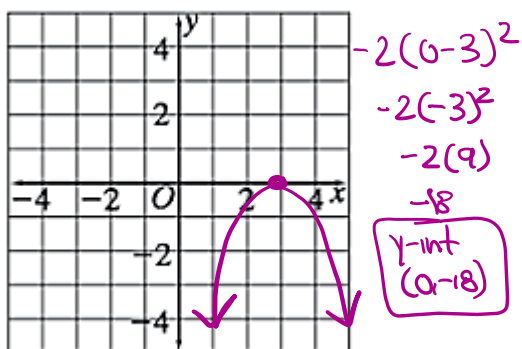
Identify the solutions and multiplicity for the polynomial function. Graph the polynomial and state the end behavior of the polynomial.

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

Roots: -3 mult. 2

Leading Coefficient: -2

Degree: 2 even
-L.C.



End Behavior:

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

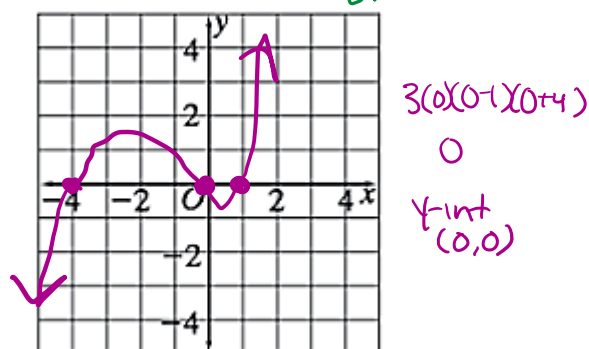
As $x \rightarrow +\infty, f(x) \rightarrow -\infty$

2. $f(x) = 3x(x - 1)(x + 4)$

Roots: 0, 1, -4

Leading Coefficient: 3

Degree: 3 odd
+L.C.



End Behavior:

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

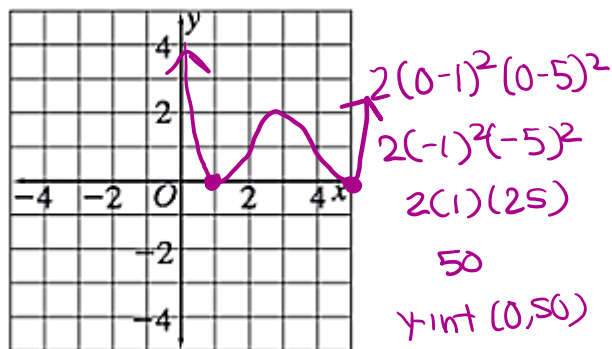
As $x \rightarrow +\infty, f(x) \rightarrow \infty$

3. $f(x) = 2(x - 1)^2(x - 5)^2$

Roots: 1 mult. 2, 5 mult. 2

Leading Coefficient: 2

Degree: 4 even
+L.C.



End Behavior:

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

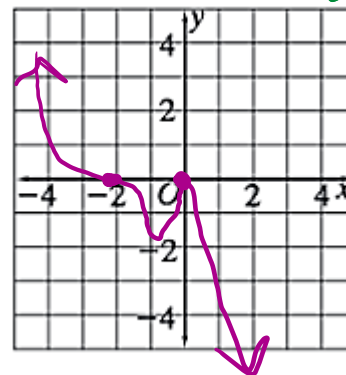
As $x \rightarrow +\infty, f(x) \rightarrow \infty$

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

Roots: 0 mult. 2, -2 mult. 3

Leading Coefficient: -3

Degree: 5 odd
-L.C.



End Behavior:

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

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