

GPS Calculus
 Graphs and Characteristics of Polynomials
 Graph Scales GIVEN

Name: _____

Characteristics of Polynomials - Describe all the characteristics of each polynomial.

Sketch each of the graphs

$f(x) = x^3 - 5x^2 - x + 5$ $(-\infty, \infty)$
 \mathbb{R} $-\infty < x < \infty$

Desmos

1. Domain: \mathbb{R}

Range: \mathbb{R}

Zeros: $x = -1, 1, 5$
 $(-1, 0), (1, 0), (5, 0)$

x-int: $(0, 5)$

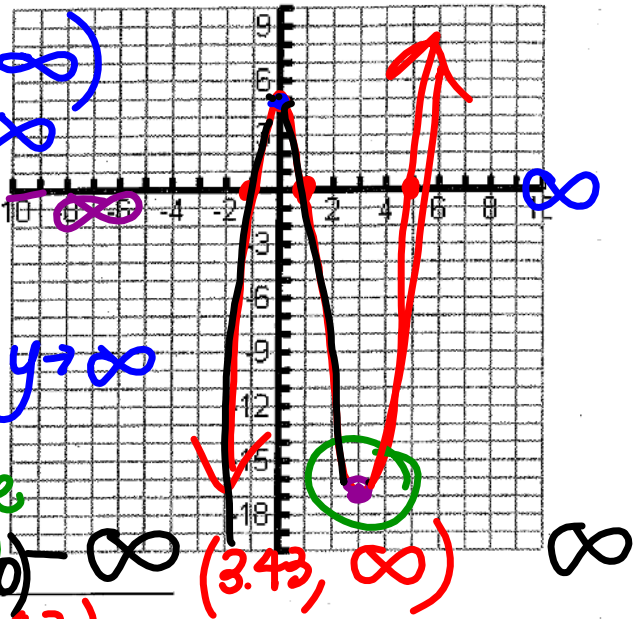
y-int: $(0, 5)$

end behavior: $x \rightarrow -\infty, y \rightarrow -\infty$ $x \rightarrow \infty, y \rightarrow \infty$

Maximums: global: $(-1.0, 3.05)$
 Local: $(-1.0, 3.05)$

Minimums: global: $(3.43, -16.90)$
 Local: $(3.43, -16.90)$

Intervals: increasing: $(-\infty, -1.0)$ $(3.43, \infty)$
 decreasing: $(-1.0, 3.43)$



$f(x) = x^4 - 13x^2 + 40$

2. Domain: _____

Range: _____

Zeros: _____

x-int: _____

y-int: _____

end behavior: _____

Maximums: global: _____

Local: _____

Minimums: global: _____

Local: _____

Intervals: increasing: _____

decreasing: _____

