

WORKSHEET 2.9 PART 2 – Analyzing Graphs of Polynomials



Name: _____ Hour: _____ Date: _____

DIRECTIONS: State what you know by analyzing the graph of each polynomial function. Also, write an equation for the polynomial. (2.9.A)

1) x-intercepts: $(-1, 0), (2, 0),$

End behavior: $(6, 0)$

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

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

Equation: $f(x) = (x + 1)(x - 2)(x - 6)$

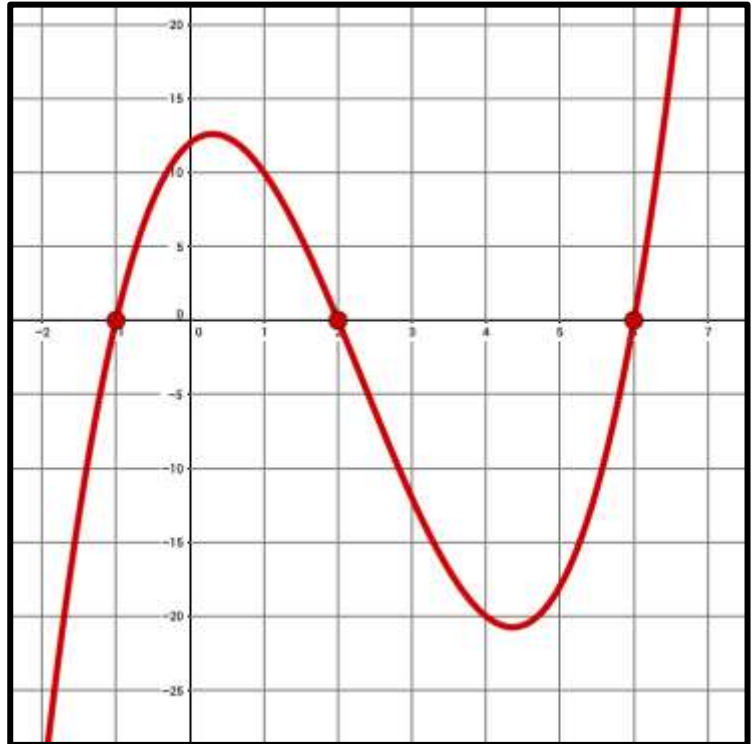
y-intercept (approx.): $(0, 12)$

Local maximum(s) (approx.):

$(0.5, 13)$

Local minimum(s) (approx.):

$(4.5, -21)$



2) x-intercepts: $(-3, 0), (-2, 0),$

End behavior: $(0, 0), (4, 0)$

$f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$

$f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

Equation: $f(x) = x(x + 3)(x + 2)(x - 4)$

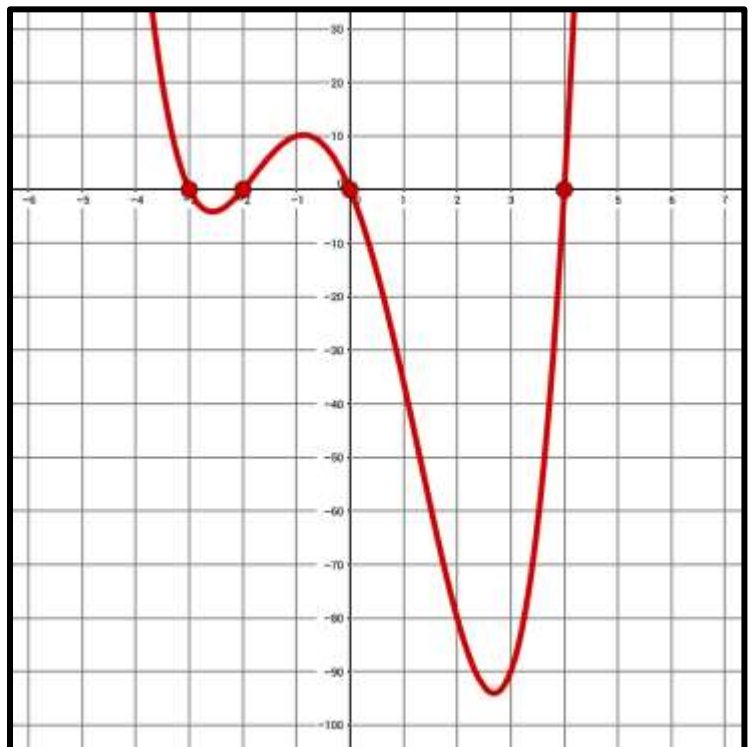
y-intercept (approx.): $(0, 0)$

Local maximum(s) (approx.):

$(-1, 10)$

Local minimum(s) (approx.):

$(-2.5, -5)$ and $(2.5, -95)$



3) x-intercepts: $(-5, 0)$ and $(2, 0)$

End behavior:

$$f(x) \rightarrow +\infty \text{ as } x \rightarrow -\infty$$

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow +\infty$$

Equation: $f(x) = -(x + 5)(x - 2)^2$

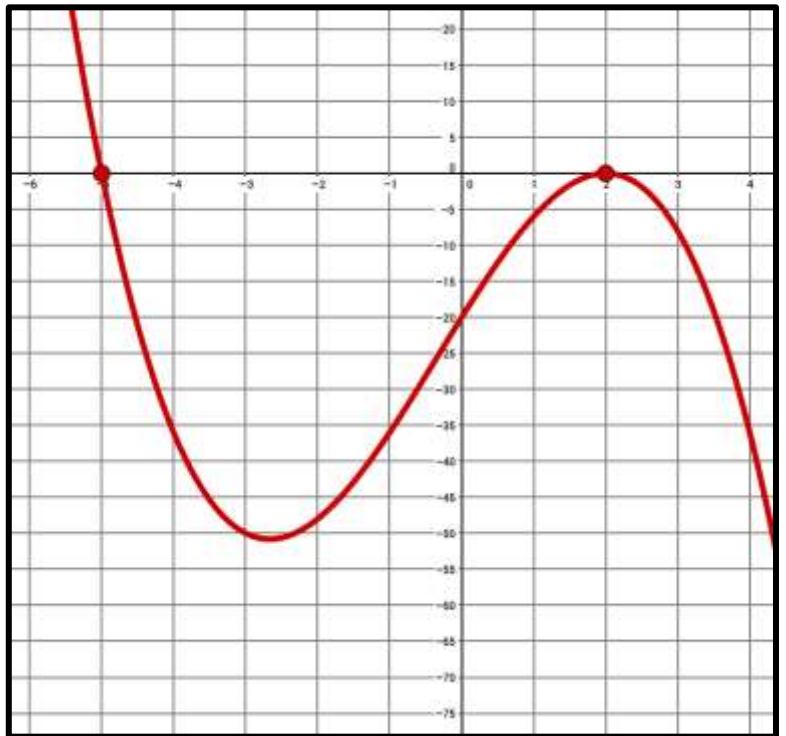
y-intercept (approx.): $(0, -20)$

Local maximum(s) (approx.):

$(2, 0)$

Local minimum(s) (approx.):

$(-3, -50)$



4) x-intercepts: $(-1, 0), (4, 0), (5, 0), (8, 0)$

End behavior:

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow -\infty$$

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow +\infty$$

Equation: $f(x) = -(x + 1)(x - 4)(x - 5)(x - 8)$

y-intercept (approx.): $(0, 160)$

Local maximum(s) (approx.):

$(0.5, 180)$ and $(7, 50)$

Local minimum(s) (approx.):

$(4.5, -5)$

