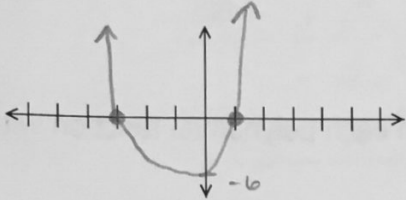


Roots & Multiplicity Practice Problems

Name Key
 Period _____ Date _____

Find each polynomial's **roots** (including each root's multiplicity), **degree**, **leading coefficient**, and **y-intercept**. Use this information to sketch a graph of the polynomial.

1. $y = 2(x+3)(x-1)$
(2)(3)(-1)



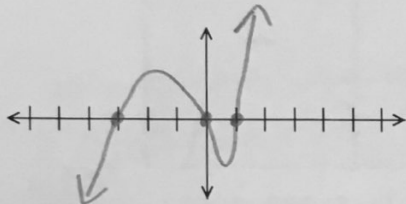
ALL roots: $x = -3$ $x = 1$ all m_1
 (including multiplicity)

Degree: 2

Leading Coeff.: 2

y-intercept: -6

2. $y = 2x(x+3)(x-1)$



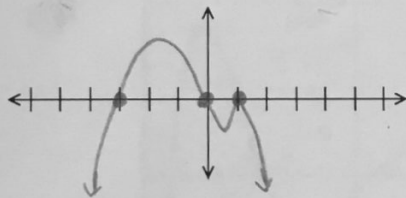
ALL roots: $x = 0$ $x = -3$ $x = 1$ all m_1
 (including multiplicity)

Degree: 3

Leading Coeff.: 2

y-intercept: 0

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



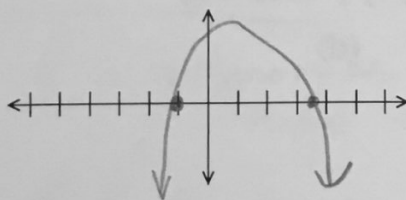
ALL roots: $x = 0$ $x = -3$ $x = 1$
 (including multiplicity) m_1 m_2

Degree: 4

Leading Coeff.: -2

y-intercept: 0

4. $y = -3(2x-7)(x+1)^3$
(-3)(-7)(1)



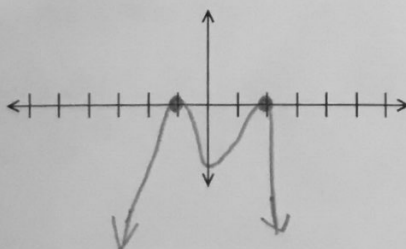
ALL roots: $x = 7/2$ $x = -1$
 (including multiplicity) m_1 m_3

Degree: 4

Leading Coeff.: -6

y-intercept: 21

5. $y = -3(x-2)^2(x+1)^2$
(-3)(4)(1)



ALL roots: $x = 2$ $x = -1$
 (including multiplicity) m_2 m_2

Degree: 4

Leading Coeff.: -3

y-intercept: -12