**Practice! Show all work on a separate sheet. No work = No credit!**

**1.** *f*(*x*) = *x*3 − 9*x*2 + 27*x −* 27 **Degree = \_3\_\_\_; # of roots: \_3\_\_\_; # of real roots: 1\_\_\_\_\_**

**List of all roots: \_\_\_3 mult 3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2.** *y* = 2*x*3 − 8*x*2 + 18*x −* 72 **Degree = \_\_3\_\_; # of roots: \_3\_\_\_; # of real roots: \_\_1\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_4, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3.** *y* = *x*3 − 10*x −* 12 **Degree = \_\_3\_\_; # of roots: \_\_\_3\_; # of real roots: \_\_3\_\_\_**

**List of all roots: \_\_\_\_-2, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4.** *y* = *x*3 − 4*x*2 + 8  **Degree = \_\_3\_\_; # of roots: \_\_3\_\_; # of real roots: \_\_\_3\_\_**

**List of all roots: \_\_\_\_\_\_\_2, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**5.** *f*(*x*) = 2*x*3 + *x −* 3 **Degree = \_3\_\_\_; # of roots: \_3\_\_\_; # of real roots: \_1\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_1,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**6.** *y* = *x*3 − 2*x*2 − 11*x +* 12 **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**7.** *g*(*x*) = *x*3 + 4*x*2 + 7*x +* 28 **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**8.** *f*(*x*) = *x*3 + 3*x*2 + 6*x +* 4 **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**9.** *g*(*x*) = *x*4 − 5*x*2 − 36 **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**10.** *y* = *x*4 − 7*x*2 + 12 **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**11.** *y* = 9*x*4 + 5*x*2 − 4  **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**12.** *y* = 4*x*4 − 11*x*2 − 3 **Degree = \_\_\_\_; # of roots: \_\_\_\_; # of real roots: \_\_\_\_\_**

**List of all roots: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**