Honors Algebra II Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LT 8-1: Characteristics of Polynomials Day 3 Period\_\_\_\_

**Write the following polynomials in standard form:**

1) $f\left(x\right)=x\left(x+3\right)^{2}$ 2) $g\left(x\right)=(x+1)(x+2)(x+3)$

**Write a polynomial function in standard form with the given zeros.**

3) $x=-2, 0, 1$ 4) $x=3 multiplicity 2$

5) $x=-2, 0 multiplicity 3, 2$ 6) $x=-4, -3, 0, 3, 4$

7) Write a polynomial equation for a graph that passes through the point (−1, 60) and has three x-intercepts: (−4, 0), (1, 0), and (3, 0).

8) Write a polynomial equation for a graph that has three $x$‑intercepts: $\left(-5, 0\right), (3, 0)$ and $(1, 0)$ and it passes through the point $(4, 108)$.

9) Write a polynomial equation for a graph that has $x$‑intercepts at $\left(-2, 0\right) and (3, 0)$, a bounce point at $(-4, 0)$ and passes through the point $(5, 25)$.

10) A rectangular box is $2x+3$ units long, $2x-3$ units wide, and $3x$ units high. Express its volume as a polynomial in standard form.