(a) Sketch the graph of the following polynomial function using the tools seen in class and on your homework.

\[ f(x) = x^2(x+2)(x^2 - 4) = x^2(x+2)(x+2)(x-2) = x^2(x+2)^2(x-2) \]

**Zeros:**
- \( x = 0 \) w/mult. 2 touch
- \( x = -2 \) w/mult. 2 touch
- \( x = 2 \) w/mult. 1 cross

**Long Term**
- \( f(x) \) is 5th degree with + leading coefficient.

**Points:**
- \( f(-1) = (-1)^2(-1+2)(-1)^2-9 = -3 \)
- \( f(1) = (1+2)^2(1)^2-9 = -9 \)
- \( f(-3) = (-3)^2(-3+2)(-3)^2+4) = -45 \)
- \( f(3) = (3)^2(3+2)((3)^2+4) = 585 \)