

## HW #2: Finding Zeros and Multiplicity

State the possible number of real and imaginary zeros for each function. Then find all zeros and state the multiplicity of each zero.

1)  $f(x) = x(x+2)(x+1)^2$

2)  $f(x) = (x^2 + 4)(x^2 + 8)$

3)  $f(x) = (x-5)^2(x+1)(x-1)^3$

4)  $f(x) = (x+11)(x+1)^2$

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

6)  $f(x) = x^3 \cdot (x-5)^2$

7)  $f(x) = x(x-1)^2(x-3)$

8)  $f(x) = x(x-3)(x-1)(x+1)$

9)  $f(x) = x^2(x^2 + 4x - 42)$

10)  $f(x) = (x-13)^2 \cdot (x-1)^3 \cdot (x+1)^4$