Lesson 1.10 Warm Up

Use the following function to answer questions $f(x) = x^4 + 2x^3 - 4x^2 - 8x$

1) Determine the zeros of the polynomial by factoring. State the multiplicity of each zero

$x(x^3 + 2x^2 - 4x - 8)$

$x(x^2(x+2) - 4(x+2))$

$x(x+2)(x^2-4)$

$x(x+2)(x+2)(x-2)$

$x = 0$ m 1

$x = -2$ m 2

$x = 2$ m 1

2) Describe the **end behavior** and **maximum # of turns** of the function

EB: rise right
rise left

max # of turns = 3

3) Create a rough graph of the polynomial on the coordinate plane below. Please include end behavior, the zeros (and whether the graph bounces/ passes/wiggles through the zero) and the y intercept.