Math 150 - Exam 1 Review Assignment

Directions: Complete the following problems and show all of your work. You will turn in this assignment by uploading a scanned pdf of your work AND the video of you working out #3b to the appropriate location in Canvas.

1. Find all real or complex zeros of the function $f(x) = x^3 + 4x^2 + 5x$.

   (a) $x = 0, -2 + i, -2 - i$
   (b) $x = -2 + i, -2 - i$
   (c) $x = -5, 0, 1$
   (d) $x = 0, -4 + 2i, -4 - 2i$
   (e) None of these

2. Write the following expression in reduced form, find where the expression $= 0$ and include the restrictions of the function, if any.

$$\frac{\sqrt{x^2+4} - \dfrac{2x^2}{\sqrt{x^2+4}}}{\sqrt{x^2+4}}$$

3. Consider the function $g(x) = -\frac{1}{2}(x-3)^3 + 4$

a) Identify the parent function f.

b) Describe the sequence of transformations from f to g. **Work this problem out in the space below, AND submit a video of you working this problem out as you're explaining each step.**

c) Use function notation to write g in terms of f.

d) Graph the function.