Practice Questions

For each of the following polynomial functions, determine the zeros and any maximum and minimum values.

- Graph, in detail, any two of the functions.

a) \( y = 6x^2 + 5x - 4 \)
   - Zeros: \( \frac{0.5}{-1.33} \)
   - Max(s): \( \frac{\text{h/a}}{} \)
   - Min(s): \( (-0.417, -5.042) \)

b) \( y = 4x^2 + 8x - 7 \)
   - Zeros: \( -2.658, 0.658 \)
   - Max(s): \( \frac{\text{h/a}}{} \)
   - Min(s): \( (-1, -11) \)

c) \( y = 6x^2 + 8x - 3 \)
   - Zeros: \( -1.638, 0.3052 \)
   - Max(s): \( \frac{\text{h/a}}{} \)
   - Min(s): \( (-0.667, -5.667) \)

d) \( y = 3x^2 - 7x - 20 \)
   - Zeros: \( -1.667, 4 \)
   - Max(s): \( \frac{\text{h/a}}{} \)
   - Min(s): \( (1.167, -24.083) \)

e) \( y = 2x^3 + x^2 + 2x + 1 \)
   - Zeros: \( -0.5 \)
   - Max(s): \( \frac{\text{h/a}}{} \)
   - Min(s): \( \frac{\text{h/a}}{} \)

f) \( y = 3x^3 - x^2 - 3x + 1 \)
   - Zeros: \( -1.3, 1 \)
   - Max(s): \( (-0.477, 1.878) \)
   - Min(s): \( (0.699, -0.561) \)

(absolute/global)

(g) \( y = 3x^4 - 2x^3 + 12x - 8 \)
   - Zeros: \( -1.587, 0.6 \)
   - Max(s): \( \frac{\text{h/a}}{} \)
   - Min(s): \( (-0.858, -15.407) \)

(h) \( y = x^4 + 4x^3 - 7x^2 - 34x - 24 \)
   - Zeros: \( -4, -2, -1, 3 \)
   - Max(s): \( (-1.478, 2.818) \)
   - Min(s): \( (-3.276, -13.196), (1.756, -74.122) \)

Now some graphing practice!! These should be accurate and precise. The points of your graph should be shown clearly and the axes should be labelled.
Graph 1 (one graph from a-d)

Equation:

\[ y = 6x^2 + 5x - 4 \]
Graph 1 (one graph from a-d)

Equation:

\[ y = 4x^2 + 8x - 7 \]
Graph 1 (one graph from a-d)

Equation: \[ y = 6x^2 + 8x - 3 \]
Graph 1 (one graph from a-d)

Equation:

\[ y = 2x^2 - 7x - 20 \]
Graph 2 (one graph from e-f)

Equation:

\[ y = 2x^3 + x^2 + 2x + 1 \]
Graph 2 (one graph from e-f)

Equation:

\[ f(x) = 3x^3 - x^2 - 3x + 1 \]
Graph 3 (one graph from g-h)

Equation:

\[ y = 3x^4 - 2x^3 + 12x - 8 \]
Graph 3 (one graph from g-h)

Equation: \( h \) \( y = x^4 + 4x^3 - 7x^2 - 34x - 24 \)
Graph 3 (one graph from g-h)

Equation: