

On separate paper, use information from the first derivative, and some additional points, to sketch a reasonable graph of each function.

- Show your work and the number-line graph of the first derivative.
- Indicate the open intervals on which the function is increasing and on which the function is decreasing.
- Find and classify any local minima and maxima.
- Calculate the y-intercept and additional points.

Only use your calculator for computations and to check when done.

1. $g(x) = x^3 - 3x^2 - 9x + 22$

2. $f(x) = x^4 - 4x^3 + 12$

3. $h(x) = 6 + 12x - x^3$

4. $f(x) = 8x^2 - x^4$

5. $f(x) = \frac{2}{3}x^3 + 8x^2 + 30x$.