1. A function f that is continuous on $(-\infty, \infty)$ and twice-differentiable for $x \neq A$ satisfies the following conditions:

① $f(-\sqrt{5}-1) = B$, $f(0) = -2$, $f(\sqrt{5}-1) = C$, $f(4) = D$, $f(A) = 0$ where $B < D$

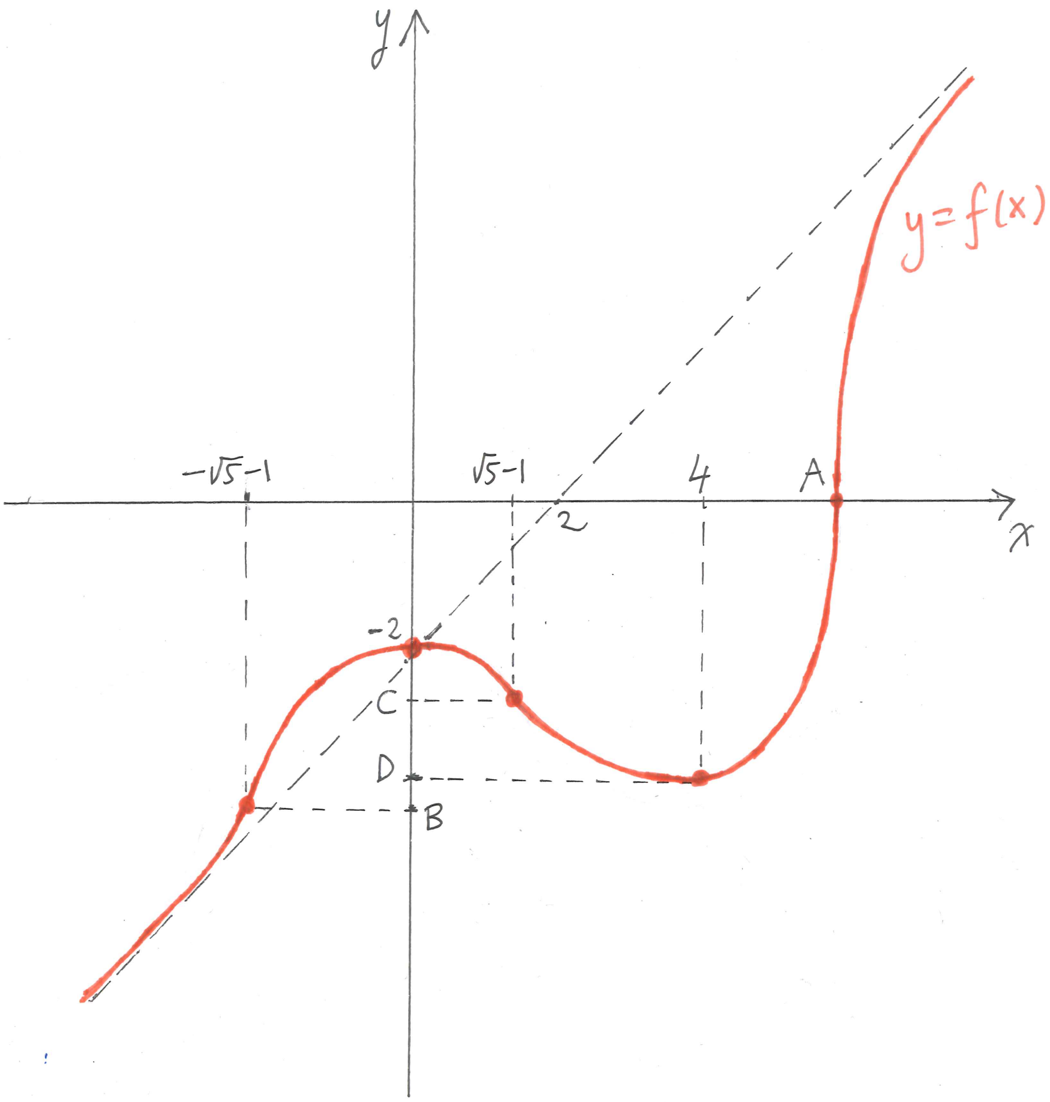
② The line $y = x - 2$ is a slant asymptote of the graph of $y = f(x)$ both as $x \to -\infty$ and as $x \to \infty$

③ $\lim_{x \to A} f'(x) = \infty$

④ $f'(x) > 0$ for $x < 0$, and for $x > 4$ and $x \neq A$; $f'(x) < 0$ for $0 < x < 4$

⑤ $f''(x) > 0$ for $x < -\sqrt{5}-1$ and for $\sqrt{5}-1 < x < A$; $f''(x) < 0$ for $-\sqrt{5}-1 < x < \sqrt{5}-1$ and for $x > A$

a. Sketch the graph of $y = f(x)$. Make sure to clearly show all important features.



b. Fill in the boxes to make the following a true statement. No explanation is required.

The function $f(x) = \sqrt[3]{ax^3 + bx^2 + cx + d}$ satisfies the conditions ①-⑤ for suitable real numbers A, B, C, D if the constants a, b, c and d are chosen as

$a = \boxed{1}$, $b = \boxed{-6}$, $c = \boxed{0}$ and $d = \boxed{-8}$.