

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

1. Find the derivatives of the following functions:

(a) $y = (x - 1)(x^2 + x + 1)$

(d) $f(x) = \frac{(2x + 3)}{(4x + 5)^7}$

(b) $y = \frac{2x + 5}{2x - 2}$

(e) $f(x) = (x^2 + 1) \left(x + 5 + \frac{1}{x} \right)$

(c) $\frac{4x + 12}{2x^3 + 1}$

(f) $y = \frac{5x + 1}{2\sqrt{x}}$