

1. Differentiate each of the following functions with respect to x . **Do not simplify.**

(a) $f(x) = \pi x$

$f'(x) = \underline{\hspace{10em}}$

(b) $f(x) = 700$

$f'(x) = \underline{\hspace{10em}}$

(c) $f(x) = \frac{1}{x^8}$

$f'(x) = \underline{\hspace{10em}}$

(d) $f(x) = \sqrt[6]{x}$

$f'(x) = \underline{\hspace{10em}}$

(e) $f(x) = -18x^2 + 15x^{7/5}$

$f'(x) = \underline{\hspace{10em}}$

(f) $f(x) = (x^3 - 3x + 1)(x^7 + 2)$

$f'(x) = \underline{\hspace{10em}}$

(g) $f(x) = \frac{x^2 - 3x}{x - 1}$

$f'(x) = \underline{\hspace{10em}}$