

3.3 The Product and Quotient Rules

Name:

Date:

P 7. Find the derivative of $f(x) = (x^2 - \sqrt{x})3^x$.

P 19. Find the derivative of $w = \frac{y^3 - 6y^2 + 7y}{y}$

P 27. Find the derivative of $f(x) = \frac{x^2 + 3x + 2}{x + 1}$.

P 45. Find an equation of the tangent line to the graph of $f(x) = \frac{2x - 5}{x + 1}$ at the point at which $x = 0$.

P 53. If $H(3) = 1$, $H'(3) = 3$, $F(3) = 5$, $F'(3) = 4$, find:

(a) $G'(3)$ if $G(z) = F(z) \cdot H(z)$

(b) $G'(3)$ if $G(w) = F(w)/H(w)$

P 61. Find $f'(x)$ for the following functions with the product rule, rather than by multiplying out.

(a) $f(x) = (x - 1)(x - 2)$

(b) $f(x) = (x - 1)(x - 2)(x - 3)$.

(c) $f(x) = (x - 1)(x - 2)(x - 3)(x - 4)$.