

3.1 Pg. 169 (1, 3, 9, 13, 17, 24, 29, 35)

1. $f(x) = -3x^0$ so $f'(x) = \boxed{0}$

3. $f(x) = x^5$ so $f'(x) = \boxed{5x^4}$

9. $f(r) = \pi r^2$ so $f'(r) = \boxed{2\pi r}$

13. $f(x) = 3x^{1/2}$ so $f'(x) = \frac{3}{2}x^{-1/2} = \boxed{\frac{3}{2\sqrt{x}}}$

17. $f(x) = 5x^2 - 3x + 7$
 $f'(x) = \boxed{10x - 3}$

24. $f(x) = \frac{x^3 + 2x^2 + x - 1}{x}$

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

$$f'(x) = 2x + 2 + x^{-2} = \boxed{2x + 2 + \frac{1}{x^2}}$$

Better Answer

OR $\boxed{\frac{2x^3 + 2x^2 + 1}{x^2}}$

29. $f(t) = 4t^{-4} - 3t^{-3} + 2t^{-1}$

$$f'(t) = -16t^{-5} + 9t^{-4} - 2t^{-2}$$

$$f'(t) = \frac{-16}{t^5} + \frac{9}{t^4} - \frac{2}{t^2} = \boxed{\frac{-2t^3 + 9t - 16}{t^5}}$$

35. $f(x) = 2x^3 - 4x$ so $f'(x) = 6x^2 - 4$

$$f'(-2) = 6(-2)^2 - 4 = \boxed{20} \quad f'(0) = \boxed{-4} \quad f'(2) = \boxed{20}$$