$\frac{d}{dx}[c] = 0$

$\frac{d}{dx}[cx] = c$

$\frac{d}{dx}[x^n] = nx^{n-1}$

1. $h(x) = 4x^3$

$h'(x) = 4 \cdot 3x^{3-1}$

$= \boxed{12x^2}$

2. $y = 3x^3 - x^2 + 7x + 5$

$y' = 3 \cdot 3x^{3-1} - 2x^{2-1} + 7 + 0$

$= \boxed{9x^2 - 2x + 7}$

3. $h(x) = x^{\frac{3}{2}}$

$h'(x) = \frac{3}{2}x^{\frac{3}{2}-1}$

$= \boxed{\frac{3}{2}x^{\frac{1}{2}}}$

4. $g(x) = \sqrt[5]{x} + 3$

$= x^{\frac{1}{5}} + 3$

$g'(x) = \frac{1}{5}x^{\frac{1}{5}-1} + 0$

$= \frac{1}{5}x^{-\frac{4}{5}}$

$= \frac{1}{5} \cdot x^{-\frac{4}{5}}$

$= \frac{1}{5} \cdot \frac{1}{x^{4/5}}$

$= \boxed{\frac{1}{5x^{4/5}}}$

5. $f(x) = 5x^{-2} + 4$

$f'(x) = 5(-2)x^{-2-1} + 0$

$= -10x^{-3}$

$= \boxed{\frac{-10}{x^3}}$

6. $f(x) = \frac{3}{(2x)^3}$

$= \frac{3}{2^3 x^3}$

$= \frac{3}{8x^3}$

$' = \frac{3x^{-3}}{8}$

$= \frac{3}{8}x^{-3}$

$f'(x) = \frac{3}{8}(-3)x^{-3-1}$

$= -\frac{9}{8}x^{-4}$

$= \boxed{\frac{-9}{8x^4}}$

7. $f(x) = \frac{5x^2}{x^{-5}}$

$= \frac{5x^2 x^5}{1}$

$= 5x^7$

$f'(x) = 5 \cdot 7x^6$

$= \boxed{35x^6}$