Section 9.5 Solutions 45, 47, 49, 79

#45] $\frac{d}{dx}\frac{3x^2}{2} - \frac{d}{dx}\frac{7}{5x^2} = 2\left(\frac{3}{2}\right)x^{2-1} - \frac{d}{dx}\frac{7}{5}x^{-2} = 3x - (-2)\left(\frac{7}{5}\right)x^{-2-1}$

$= 3x + \frac{14}{5}x^{-3}$

#47] $G(w) = \frac{5}{9w^4} + 5\sqrt[3]{w} = \frac{5}{9}w^{-4} + 5w^{1/3}$

$G'(w) = -4\left(\frac{5}{9}\right)w^{-4-1} + \frac{1}{3}(5)w^{1/3-1} = -\frac{20}{9}w^{-5} + \frac{5}{3}w^{-2/3}$

#49] $\frac{d}{du}(3u^{2/3}) - \frac{d}{du}(5u^{1/3}) = \frac{2}{3}(3)u^{2/3-1} - \frac{1}{3}(5)u^{1/3-1}$

$= 2u^{-1/3} - \frac{5}{3}u^{-2/3}$

#79] $\frac{d}{dx}\left(\frac{10x+20}{x}\right) = \frac{d}{dx}10 + \frac{d}{dx}20x^{-1}$

$= 0 + (-1)(20)x^{-1-1} = -20x^{-2}$