SATPREP

Assignment : Power Rule

Differentiate each function with respect to x.

1) $y = -4x^5 + 5x^2 - 2x$

2) $y = x^5 - 5x^3 + 5x$

3) $y = 5x^3 + 4x^2 + 4x$

4) $y = 4x^5 + 4x^3 + x^2$

5) $y = 2x^4 + 2x^2 + 5x$

6) $y = 5x^5 + 4x^4 - 4x^2$

7) $y = x^5 + 3x^2$

8) $y = 2x^{-1} + x^{-2}$

9) $y = -3x^2 + 4x^{-5}$

10) $y = 3x^5 + 2x^4$

11) $y = 3x^{\frac{3}{5}} + 2$

12) $y = 4\sqrt[5]{x^2} - 4\sqrt[3]{x}$

13) $y = -4\sqrt[3]{x} + 1$

14) $y = 2\sqrt[3]{x^2} + 2\sqrt[5]{x}$

Answers to Assignment : Power Rule

1) $\frac{dy}{dx} = -20x^4 + 10x - 2$

2) $\frac{dy}{dx} = 5x^4 - 15x^2 + 5$

3) $\frac{dy}{dx} = 15x^2 + 8x + 4$

4) $\frac{dy}{dx} = 20x^4 + 12x^2 + 2x$

5) $\frac{dy}{dx} = 8x^3 + 4x + 5$

6) $\frac{dy}{dx} = 25x^4 + 16x^3 - 8x$

7) $\frac{dy}{dx} = 5x^4 + 6x$

8) $\frac{dy}{dx} = -\frac{2}{x^2} - \frac{2}{x^3}$

9) $\frac{dy}{dx} = -6x - \frac{20}{x^6}$

10) $\frac{dy}{dx} = 15x^4 + 8x^3$

11) $\frac{dy}{dx} = \frac{9}{5x^{\frac{2}{5}}}$

12) $\frac{dy}{dx} = \frac{8}{5x^{\frac{3}{5}}} - \frac{4}{3x^{\frac{2}{3}}}$

13) $\frac{dy}{dx} = -\frac{4}{3x^{\frac{2}{3}}}$

14) $\frac{dy}{dx} = \frac{4}{3x^{\frac{1}{3}}} + \frac{2}{5x^{\frac{4}{5}}}$