

Power Rule WS new for 14-15

For # 1-5, find $f'(x)$.

$$1) f(x) = 9x - 6 + \frac{2}{x} - \sqrt{x}$$

$$2) f(x) = 4x^6 - 2x^3 - \sqrt[3]{x^2}$$

$$3) f(x) = \frac{x^3 - 8}{x^2} + \frac{1}{\sqrt{x}}$$

$$4) f(x) = 2x^3 - 4x + 10\sqrt{x} - \frac{\sqrt[3]{x}}{2}$$

$$5) f(x) = \frac{x^4}{6} - \frac{x^2}{8} + \frac{x}{4} - \frac{3}{x} - \frac{4}{\sqrt{x}} + \frac{2}{\sqrt[3]{x^2}}$$

$$6) \lim_{h \rightarrow 0} \frac{3(x+h)^4 - 2(x+h)^3 + (x+h)^2 - 8 - (3x^4 - 2x^3 + x^2 - 8)}{h} =$$

$$7) \lim_{h \rightarrow 0} \frac{2(x+h)^6 - \frac{4}{(x+h)} + \frac{2}{\sqrt{(x+h)}} - (2x^6 - \frac{4}{x} + \frac{2}{\sqrt{x}})}{h} =$$

8) Find the slope of the tangent line for $g(x) = 3x^3 - \frac{x^2}{2} + 7x - 10$ @ $x = 1$

9) Find the relative max(s) and min(s) for $g(x) = x^3 - 27x$

10) Find the relative max(s) and min(s) for

$$h(x) = \frac{x^3}{3} - 3x^2 - 16x + 8$$