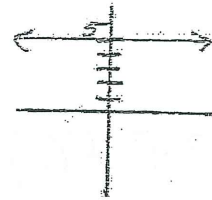


Ch. 2.2a Derivative Rules - Notes

1. Constant Rule: If $f(x) = c$, then $f'(x) = 0$

Ex. $f(x) = 5 \rightarrow f'(x) =$



2. Power Rule: If $f(x) = x^n$, then $f'(x) = n \cdot x^{n-1}$

steps: a) Bring exponent down, in front of variable

b) subtract 1 from original exponent value.

*Important Note: Be sure function is in appropriate form before applying power rule.

→ convert any radicals to rational exponents

→ Move all variables from denominator to numerator (if necessary)

Ex. 1 Find derivatives of the following:

a) $y = x^7$

b) $g(x) = \sqrt[3]{x}$

c) $y = \frac{4}{x^5}$

d) $y = 8x^{2/3} - \sqrt[5]{x} + \frac{2}{\sqrt{x}} + 0.875$

Ex. 2 If $f(x) = x^{-2}$, find $f'(2)$

Ex. 3 If $f(x) = \sqrt[3]{x^2}$, write tangent line equation to $f(x)$ at $x=8$

Ex. 4 $f(x) = \frac{x^4 - 3x^2 + 4(\sqrt[3]{x})}{\sqrt{x}}$ find $f'(x)$

Ex. 5 $f(x) = 3x(x+1)^2$ find $f'(x)$