

OIL CONSERVATION COMMISSION

BOX 2045

HOBBS, NEW MEXICO

DATE Sept. 11. 1958

OIL CONSERVATION COMMISSION
BOX 871
SANTA FE, NEW MEXICO

Re: Proposed NSP X

Proposed NSL _____

Proposed NFC. _____

Proposed DC _____

Gentlemen:

I have examined the application dated _____
for the Continental Oil Co. State A-26 26-19-36
Operator Lease and Well No. S-T-R

and my recommendations are as follows:

C-103 submitted for results of testing casing. O.K.-----E.J.F.

O.K. — J.W.R.

Yours very truly,

OIL CONSERVATION COMMISSION

$$f(x) = \frac{1}{x^2} = x^{-2}$$

$$f'(x) = -2x^{-3}$$

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

Find the derivative of $f(x) = \frac{1}{x^2}$

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Find the derivative of $f(x) = \frac{1}{x^2}$ using the power rule. Note: $\frac{1}{x^2} = x^{-2}$

The power rule states that if $f(x) = x^n$, then $f'(x) = nx^{n-1}$. In this case, $n = -2$, so we have:

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

Find the derivative of $f(x) = \frac{1}{x^2}$ using the quotient rule. Note: $\frac{1}{x^2} = x^{-2}$

The quotient rule states that if $f(x) = \frac{u(x)}{v(x)}$, then $f'(x) = \frac{u'(x)v(x) - u(x)v'(x)}{v(x)^2}$. In this case, $u(x) = 1$ and $v(x) = x^2$, so we have:

$f'(x) = \frac{u'(x)v(x) - u(x)v'(x)}{v(x)^2} = \frac{0 \cdot x^2 - 1 \cdot 2x}{(x^2)^2} = \frac{-2x}{x^4} = -\frac{2}{x^3}$

Find the derivative of $f(x) = \frac{1}{x^2}$ using the definition of the derivative.

The definition of the derivative states that $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$. In this case, $f(x) = \frac{1}{x^2}$, so we have:

$$f'(x) = \lim_{h \rightarrow 0} \frac{\frac{1}{(x+h)^2} - \frac{1}{x^2}}{h}$$

$$f'(x) = \lim_{h \rightarrow 0} \frac{\frac{x^2 - (x+h)^2}{(x+h)^2 x^2}}{h} = \lim_{h \rightarrow 0} \frac{\frac{x^2 - (x^2 + 2xh + h^2)}{(x+h)^2 x^2}}{h}$$