

New Mexico Oil Conservation Commission
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STATE OF NEW MEXICO }
COUNTY OF CHAVES } ss.

R. L. Adams, being first duly sworn on behalf of the applicant in the above application, says: That he is the Division Superintendent, of applicant, and as such is authorized to make said application; that he has read the foregoing application, knows the contents thereof, and that the same are true, as he is reliably informed and believes.

R. L. Adams
(Signature)

Subscribed and sworn to before me this 7th day of February,
1958.

Louis B. Houston
Notary Public

My Commission expires:

May 25, 1960

Copies to:

New Mexico Oil Conservation Commission-6
HLJ-2 FTE File

Registered Mail:

Amerada Petroleum Corporation
Box 2040
Tulsa, Oklahoma

Two States Oil Company
528 Wilson Building
Dallas, Texas

Sinclair Oil and Gas Company
Box 1470
Hobbs, New Mexico

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

$$f(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the investigation of its behavior as $x \rightarrow \infty$.

It is shown that the function $f(x)$ is increasing and concave down, and that it approaches a horizontal asymptote as $x \rightarrow \infty$. The value of this asymptote is found to be $\frac{\pi}{2}$. The function $f(x)$ is also shown to be continuous and differentiable everywhere, and its derivative is found to be $f'(x) = \frac{1}{1+x^2}$. The function $f(x)$ is also shown to be bounded on any finite interval, and its maximum and minimum values are found to be $\frac{\pi}{2}$ and 0 respectively.

2. The second part of the paper is devoted to the study of the properties of the function $g(x)$ defined by the equation

$$g(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the investigation of its behavior as $x \rightarrow \infty$.

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