

Answer on Question #41417 – Math - Integral Calculus

We have two functions:

$$f(x, y) = \frac{y}{x} \quad \text{and} \quad g(x, y) = \frac{x - y}{x + y}$$

Consider the second function:

$$g(x, y) = \frac{x - y}{x + y}$$

Transform:

$$\frac{x - y}{x + y} = \frac{x - y}{x + y} \cdot \frac{\frac{1}{x}}{\frac{1}{x}} = \frac{\frac{x - y}{x}}{\frac{x + y}{x}} = \frac{1 - \frac{y}{x}}{1 + \frac{y}{x}}$$

Then

$$g(x, y) = \frac{1 - \frac{y}{x}}{1 + \frac{y}{x}} = \frac{1 - f(x, y)}{1 + f(x, y)}$$

So we have a functional relation between $f(x, y)$ and $g(x, y)$:

$$\mathbf{g(x, y) = \frac{1 - f(x, y)}{1 + f(x, y)}}$$