

**Answer to Question #83466 - Math - Calculus**

**Question:**

The function  $F(x, y) = (y + \cos x, x - 1)$  is conservative. False or True

**Solution:**

True.

The function  $F(x, y) = (P, Q)$  is conservative if  $\frac{\partial P}{\partial y} = \frac{\partial Q}{\partial x}$ .

Given  $P = y + \cos x$  and  $Q = x - 1$ .

$$\frac{\partial P}{\partial y} = 1 \text{ and } \frac{\partial Q}{\partial x} = 1.$$

Since  $\frac{\partial P}{\partial y} = \frac{\partial Q}{\partial x}$ ,  $F(x, y)$  is conservative.

Answer: True.