

$e^{x^2y}$  is continuous on  $R^2$  and  $\sqrt{x + y^8}$  is continuous on its domain  $\{(x, y) \mid x + y^8 \geq 0\} = \{(x, y) \mid x \geq -y^8\}$ , so

$F(x, y) = e^{x^2y} + \sqrt{x + y^8}$  is continuous on the set  $\{(x, y) \mid x \geq -y^8\}$ .