2014 Q6

6. Given \( e^y = x^3 \cos^2 x \), \( x > 0 \), show that

\[
\frac{dy}{dx} = \frac{a}{x} + bt\tan x, \text{ for some constants } a \text{ and } b.
\]

State the values of \( a \) and \( b \).

Answers

\( a = 3, \ b = -2 \)