

7 The equation of a curve is $y = \sqrt{\frac{e^{4x}}{2x-3}}$

When x is increased to $(x + \delta x)$, y increases to $(y + \delta y)$ where δx and δy are small.

(a) Show that $\delta y \approx \frac{e^{2x}(4x-7)}{(2x-3)^{\frac{3}{2}}} \delta x$ (7)

Given that $x = 2.5$

(b) find an estimate, to 2 significant figures, of the value of δy when the value of x increases by 0.2% (3)

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Question 7 continued

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