Question 3 (9 marks)

The graph of $f(x) = e^{-\frac{2}{3}x^3}$ is shown below.

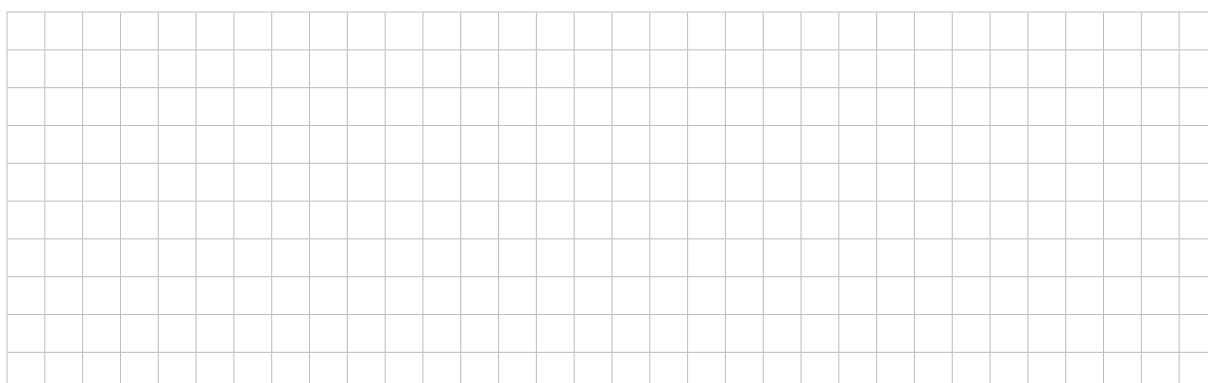(a) Find $f'(x)$.

(2 marks)

(b) Find $f''(x)$.

(2 marks)

(c) (i) Hence, using algebra, find the x-coordinates of all inflection points of the graph of

$$f(x) = e^{-\frac{2}{3}x^3}.$$

(3 marks)

(ii) Using algebra, determine whether or not any of these inflection points are stationary inflection points.

(2 marks)