

You *MAY NOT* use a calculator.

Consider the differential equation  $\frac{dy}{dx} = e^y (3x^2 - 6x)$ . Let  $y = f(x)$  be the particular solution to the differential equation that passes through  $(1, 0)$ .

- (a) Write an equation for the line tangent to the graph of  $f$  at the point  $(1, 0)$ . Use the tangent line to approximate  $f(1.2)$ .

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- (b) Find  $y = f(x)$ , the particular solution to the differential equation that passes through  $(1, 0)$ .