

'Finding The Total Carbon Dioxide Emissions From 1850'

$$a) \int_0^{167} E dt = \int_0^{167} 1.5e^{0.02t} dt$$

$$(1) \int_0^{167} 1.5e^{0.02t} dt = [75e^{0.02t}]_0^{167}$$

$$E = 2.04 \times 10^{12} \text{ tonnes of carbon dioxide}$$

[3 marks]

b) Value at $t = 150$ is 29.5. Value of exponential model is 30, Thus the exponential model will be a very slight overestimate.

[1 mark]