8 The population P, in millions, of a country is given by $P = A \times b^t$, where t is the number of years after January 2000 and A and b are constants. In January 2010 the population was 40 million and had increased to 45 million by January 2013.

(a) Show that $b = 1.04$ to 2 decimal places and find A to the nearest integer. [4]

(b) Find the population in January 2020, giving your answer to the nearest million. [1]

(c) In January of which year will the population be over 100 million for the first time? [3]

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