

12. A company extracted 4500 tonnes of a mineral from a mine during 2018.

The mass of the mineral which the company expects to extract in each subsequent year is modelled to decrease by 2% each year.

(a) Find the total mass of the mineral which the company expects to extract from 2018 to 2040 inclusive, giving your answer to 3 significant figures. (2)

(b) Find the mass of the mineral which the company expects to extract during 2040, giving your answer to 3 significant figures. (2)

The costs of extracting the mineral each year are assumed to be:

- £800 per tonne for the first 1500 tonnes
- £600 per tonne for any amount in excess of 1500 tonnes

The expected cost of extracting the mineral from 2018 to 2040 inclusive is  $\pounds x$  million.

(c) Find the value of  $x$ , giving your answer to 3 significant figures. (3)