**Calculating with Map Scales**

(a) The scale of a map is $1 :250000$. On the map, the distance between two towns is $8.2$ cm. Work out the real-life distance between the two towns, giving your answers in km.

(b) A map has a scale of $1 : 125000$. Derek wants to travel between two shops which are $1.75$ km apart in real-life. How far apart in cm will the two shops be on the map?

(a) Anum is making a scale model of a car. She is using a scale of $1 :25$. The actual length of the car is $3.9$ m. How long will Anum’s model car need to be in cm?

(b) Teo is making a scale model of a bridge using a scale of $1 : 125$. The model bridge has a height of $54$ cm. What is the actual height of the bridge in metres?

(a) The actual distance between two cities is $11.4$ km. On a map the distance between these cities is $7.6$ cm. Work out the scale of the map, giving your answer in the form $1 : n$.

(b) Umair has made two model airplanes, using the same scale for both. His model Boeing 747 has a wingspan of $11.2$ cm and the actual wingspan of the same plane is $61.6$ metres. If Umair’s model Airbus A320 has a wingspan of $6.7$ cm, what is its actual wingspan in metres?

Flora has a map with a scale of $1 :n$

The distance from home to the post office is $8$ cm on the map and $132$ metres in real-life.

(a) Work out the value of $n$

(b) The distance from the post office to the station is $11.2$ cm on the map, and the distance from home to the station is $9.7$ cm. Flora walks from home to the post office, then to the station, then back home. How far has she walked in total?

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