

1. The scale for the map below is 1:32,000,000. Determine the distance from Los Angeles to New York, in kilometres.



$$\text{Scale factor} = \frac{1}{32,000,000} = \frac{12.3 \text{ cm}}{\text{distance}}$$

$$\begin{aligned} \text{distance} &= (12.3 \text{ cm}) 32,000,000 \\ &= 393,600,000 \text{ cm} \\ &= 3,936,000 \text{ m} \\ &= 3,936 \text{ km} \end{aligned}$$

2. The height of the man in the photo is 1.8 m.
 a) What is the scale factor of the picture?
 b) What is the height of the truck?

180cm

a)

$$\text{Scale factor} = \frac{2.1 \text{ cm}}{180 \text{ cm}} = 0.011\bar{6}$$

$$\text{or } \frac{2.1 \text{ cm}}{180 \text{ cm}} = \frac{21}{1800} = \frac{7}{600}$$

$$\begin{aligned} \text{Scale } &7:600 \\ &1:85.7 \end{aligned}$$

b)

$$\text{Scale factor} = \frac{7}{600} = \frac{7.6 \text{ cm}}{\text{height}}$$

$$7 \text{ height} = (7.6 \text{ cm}) 600$$

$$\text{height} = \frac{(7.6 \text{ cm}) 600}{7}$$

$$\approx 651.4 \text{ cm}$$

$$\approx 6.51 \text{ m}$$



7.6 cm

2.1 cm