

① (a) (i) Scale = 1 : 20000000

$$= 1 \text{ cm} : 20000000 \text{ cm}$$

$$= 1 \text{ cm} : 200 \text{ km}$$

$$1 \text{ cm} = 200 \text{ km}$$

$$12 \text{ cm} = x$$

$$x = \frac{12 \text{ cm}}{1 \text{ cm}} \times 200 \text{ km}$$

$$= 2400 \text{ km}$$

$$(ii) \text{ Actual area} = \left(\frac{200 \text{ km}}{1 \text{ cm}} \right)^2 \times 13 \text{ cm}^2$$

$$= \frac{40000 \text{ km}^2}{1 \text{ cm}^2} \times 13 \text{ cm}^2$$

$$= 520000 \text{ km}^2$$

(b) (i) Scale = 31.6 cm : 1580 km

$$= \frac{31.6 \text{ cm} : 158000000 \text{ cm}}{31.6 \text{ cm}}$$

$$= 1 : 5000000$$

$$(ii) \begin{array}{r} 14.03 \\ 11.55 - \\ \hline \end{array} \rightarrow \begin{array}{r} 13.63 \\ 11.55 - \\ \hline 02.08 \end{array}$$

$$= 2 \text{ h } 8 \text{ min}$$

$$= 2 \text{ h} + \frac{8}{60} \text{ h}$$

$$= 2 \frac{8}{60} \text{ h}$$

$$= 2 \frac{2}{15} \text{ h}$$

$$= \frac{32}{15} \text{ h}$$

$$\text{Average speed} = \frac{\text{Distance}}{\text{Time}}$$

$$= \frac{1580 \text{ km}}{32/15 \text{ h}}$$

$$= 1580 \div \frac{32}{15}$$

$$= 1580 \times \frac{15}{32}$$

$$= 740 \frac{5}{8} \text{ km/h}$$