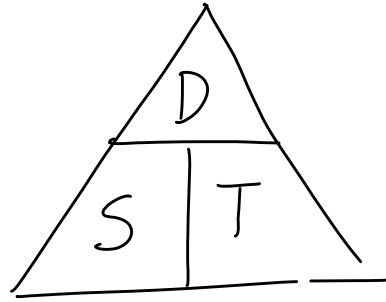


## STANDARD GRADE

2007

## GENERAL PAPER 2

$$\begin{aligned}
 1. \quad S &= 144 \text{ kmph} \\
 T &= 1 \text{ hr } 15 \text{ min} \\
 &= 1 \frac{1}{4} \text{ hrs} \\
 &= 1.25 \text{ hrs} \\
 D &= ?
 \end{aligned}$$



$$\begin{aligned}
 D &= S \times T \\
 &= 144 \times 1.25 \\
 &= \underline{\underline{180 \text{ km}}}
 \end{aligned}$$

$$\begin{aligned}
 2. \quad 23\text{p each} &\Rightarrow 7500 \times 0.23 \\
 &= \underline{\pounds} 1725
 \end{aligned}$$

£200 every 500 bricks:

$$7500 \div 500 = 15$$

So, 15 lots of £200 = ~~£~~ 3000

$$\begin{aligned}
 \text{Total cost} &= 1725 + 3000 \\
 &= \underline{\underline{\pounds 4725}}
 \end{aligned}$$

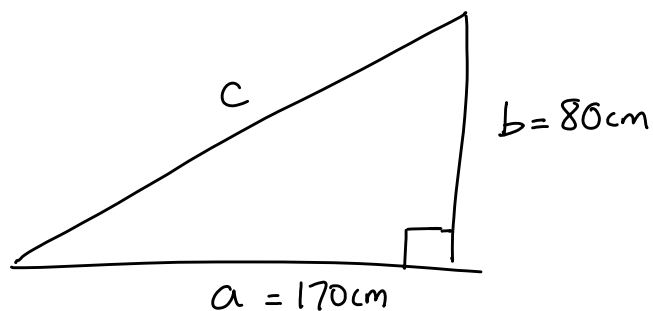
3. 2 dogs @ 2 visits = 4 visits

$$\begin{aligned}\text{Cost (dogs)} &= 4 \times 17.50 \\ &= \pounds 70.00\end{aligned}$$

$$\begin{aligned}\text{Cost (cats)} &= \text{total cost} - \text{cost (dogs)} \\ &= 105.25 - 70.00 \\ &= \pounds 35.25\end{aligned}$$

$$\begin{aligned}\text{No. of visits} &= \pounds 35.25 \div 11.75 \\ &= \underline{\underline{3}}\end{aligned}$$

4.

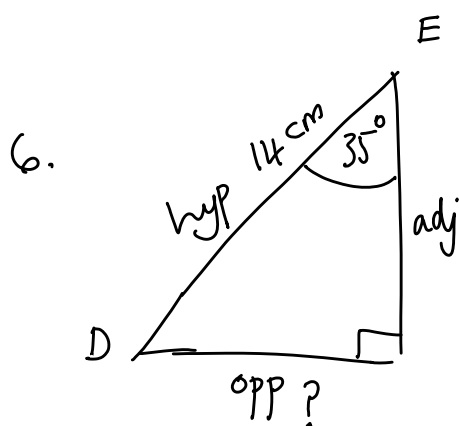


$$\begin{aligned}c^2 &= a^2 + b^2 \\ &= 170^2 + 80^2 \\ &= 28900 + 6400 \\ &= 35300\end{aligned}$$

$$\begin{aligned}c &= \sqrt{35300} \\ &= 187.88294 \\ \text{length} &= 188 \text{ cm (to nearest cm)}\end{aligned}$$

$$\begin{aligned}
 5(a) \quad & 2(3x + 7) + 4(3 - x) \\
 & 6x + 14 + 12 - 4x \\
 & 2x + 26
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad & 4a - 3 \geq 21 \\
 & 4a \geq 24 \\
 & a \geq 6
 \end{aligned}$$



$$\begin{aligned}
 \sin 35^\circ &= \frac{\text{opp}}{\text{hyp}} \\
 &= \frac{x}{14}
 \end{aligned}$$

$$14 \times \sin 35^\circ = x$$

$$\begin{aligned}
 x &= 8.03007 \\
 &= 8.03 \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 DF &= 2 \times x \\
 &= 2 \times 8.03 \\
 &= 16.06 \\
 &= 16.1 \text{ cm (to 1 d.p.)}
 \end{aligned}$$

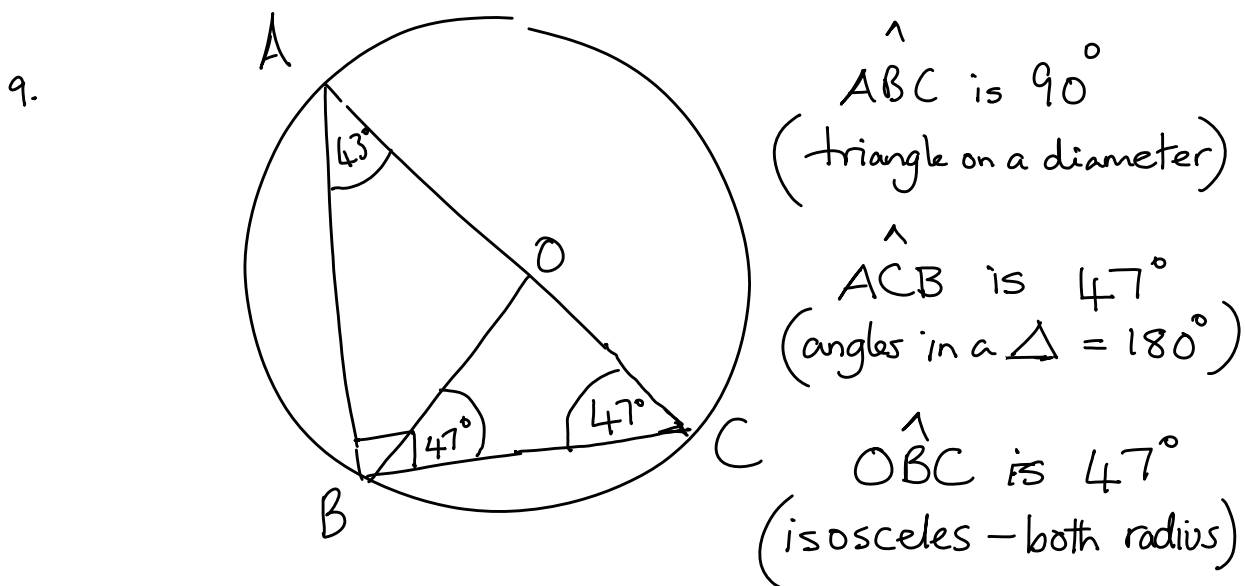
$$\begin{aligned}
 7. (a) \quad \text{length} &= \pi D \div 2 \\
 &= \pi \times 4 \div 2 \\
 &= 6.28318 \\
 &= 6.3 \text{ m (to 1 d.p.)}
 \end{aligned}$$

$$\begin{aligned}
 (b) \quad \text{length six semicircles} &= 6 \times 6.3 \\
 &= 37.8 \text{ m}
 \end{aligned}$$

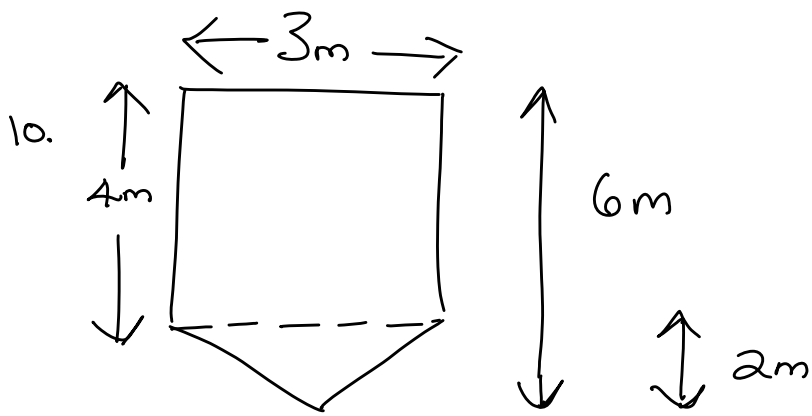
Yes this is enough. To cover the whole canopy requires 37.8m, which is less than the 40m that he has.

$$\begin{aligned}
 8. \quad \text{Years interest} &= 6.3\% \text{ of } 4200 \\
 &= 4200 \div 100 \times 6.3 \\
 &= \underline{\underline{\pounds 264.60}}
 \end{aligned}$$

$$\begin{aligned}
 10 \text{ months interest} &= 264.60 \div 12 \times 10 \\
 &= \underline{\underline{\pounds 220.50}}
 \end{aligned}$$



$$\text{So, } \hat{B}OC \text{ is } 86^\circ \text{ (angles in a } \Delta = 180^\circ)$$

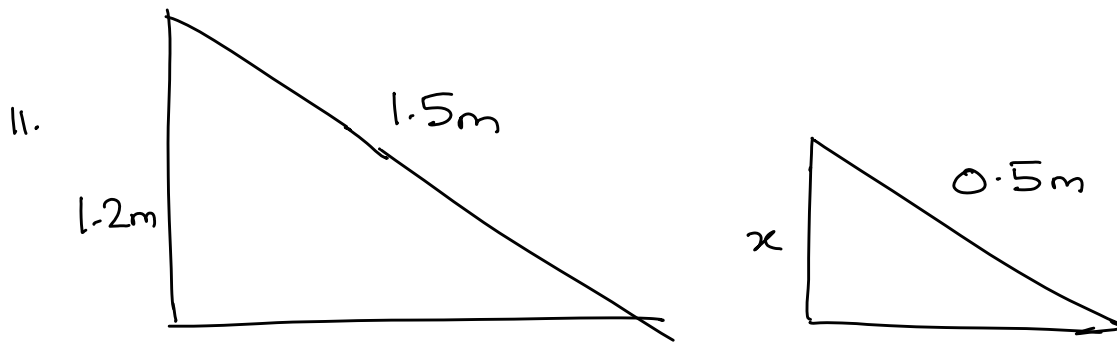


$$\begin{aligned}
 \text{Area rectangle} &= l \times b \\
 &= 4 \times 3 \\
 &= 12\text{m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Area triangle} &= \frac{1}{2} \times b \times h \\
 &= \frac{1}{2} \times 3 \times 2 \\
 &= 3\text{m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Total area} &= 12 + 3 \\
 &= \underline{15\text{m}^2}
 \end{aligned}$$

$$\begin{aligned}
 10(b) \text{ Volume} &= A \times h \\
 &= 15 \times 3.5 \\
 &= \underline{\underline{52.5\text{m}^3}}
 \end{aligned}$$



To get from 1.5 to 0.5:

$$1.5 \div 1.5 \times 0.5 = 0.5$$

So to get from 1.2 to x

$$1.2 \div 1.5 \times 0.5 = 0.4$$

So,  $x = 0.4\text{m}$

12. (a)  $75\text{ mm} = 180\text{ min}$

$$1\text{ mm} = \frac{180}{75}$$

$$= 2.4\text{ min}$$

$$40\text{ mm} = 2.4 \times 40$$

$$= \underline{\underline{96\text{ min}}}$$

(b)  $180\text{ min} = 75\text{ mm}$

$$3\text{ hrs} = 75\text{ mm}$$

$$1\text{ hr} = 25\text{ mm}$$

$$2\text{ hr} = 50\text{ mm}$$

$$\frac{1}{2}\text{ hr} = 12.5\text{ mm}$$

$$\begin{aligned}\text{So, } 2\frac{1}{2}\text{ hr} &= 50 + 12.5 \\ &= \underline{\underline{62.5\text{ mm}}}\end{aligned}$$

OR

$$\begin{aligned}180\text{ min} &= 75\text{ mm} \\ 1\text{ min} &= \frac{75}{180} \\ &= 0.416666\end{aligned}$$

and  $2\frac{1}{2}\text{ hr} = 150\text{ mins}$ , so

$$\begin{aligned}2\frac{1}{2}\text{ hr} &= 150 \times 0.416666 \\ &= \underline{\underline{62.5\text{ mm}}}\end{aligned}$$