

ERRATA

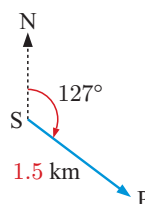
Mathematics: Core Topics SL WORKED SOLUTIONS

First edition - 2019

The following erratum was made on 26/Mar/2020

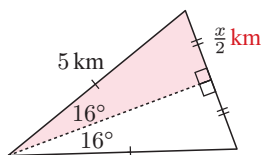
page 315 **EXERCISE 7F** Question **8 a**, diagram should read:

- 8 a** Suppose Paul starts at S and finishes at P.



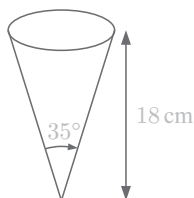
page 324 **REVIEW SET 7A** Question **7 a**, diagram should read:

- 7 a**



page 326 **REVIEW SET 7A** Question **12**, right hand side diagram should read:

- 12**



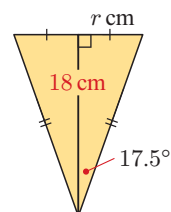
We draw the isosceles triangle cross-section of the cone as shown.

Let the radius of the cone be r cm.

$$\tan 17.5^\circ = \frac{r}{18}$$

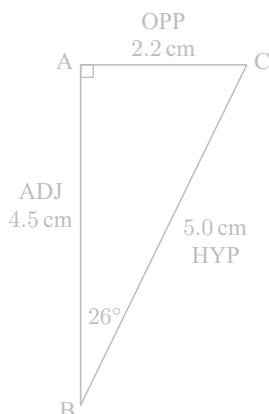
$$\therefore 18 \times \tan 17.5^\circ = r$$

$$\therefore r \approx 5.68$$



page 327 **REVIEW SET 7B** Question **2 b**, should read:

- 2 a**



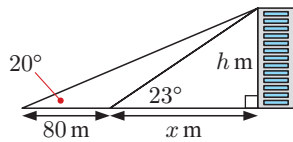
b i $\sin 26^\circ = \frac{\text{OPP}}{\text{HYP}} \approx \frac{2.2}{5.0} \approx 0.44$

ii $\cos 26^\circ = \frac{\text{ADJ}}{\text{HYP}} \approx \frac{4.5}{5.0} \approx 0.90$

iii $\tan 26^\circ = \frac{\text{OPP}}{\text{ADJ}} \approx \frac{2.2}{4.5} \approx 0.49$

c $\sin 26^\circ \approx 0.44, \cos 26^\circ \approx 0.90, \tan 26^\circ \approx 0.49$

8



Let the height of the building be h m.

$$\tan 20^\circ = \frac{h}{x + 80}$$

$$\therefore h = (x + 80) \tan 20^\circ$$

page 424 **EXERCISE 10F** Question **12**, replace with:

12 b We need to solve $2p^2 - p^4 \geq \frac{1}{2}$

$$\text{Let } X = p^2$$

$$\therefore 2X - X^2 \geq \frac{1}{2}$$

$$\therefore X^2 - 2X \leq -\frac{1}{2}$$

$$\therefore X^2 - 2X + (-1)^2 \leq -\frac{1}{2} + (-1)^2 \quad \{\text{completing the square}\}$$

$$\therefore (X - 1)^2 \leq \frac{1}{2}$$

$$\therefore -\frac{1}{\sqrt{2}} \leq X - 1 \leq \frac{1}{\sqrt{2}}$$

$$\therefore 1 - \frac{1}{\sqrt{2}} \leq X \leq 1 + \frac{1}{\sqrt{2}}$$

$$\therefore 1 - \frac{1}{\sqrt{2}} \leq p^2 \leq 1 + \frac{1}{\sqrt{2}}$$

$$\therefore \sqrt{1 - \frac{1}{\sqrt{2}}} \leq p \leq \sqrt{1 + \frac{1}{\sqrt{2}}} \quad \{\text{as } p \geq 0\}$$

$$\therefore p = \sqrt{1 - \frac{1}{\sqrt{2}}} \approx 0.541 \quad \text{is the least value for which } 2p^2 - p^4 \geq \frac{1}{2}$$

page 439 **EXERCISE 10I** Question **8**, insert line before last:

8 If X and Y are independent events, then $P(X \cap Y) = P(X) \times P(Y)$

$\therefore$ if $A \cap B$ and $A \cup B$ are independent,

$$P((A \cap B) \cap (A \cup B)) = P(A \cap B) \times P(A \cup B)$$

$$\therefore P(A \cap B) = P(A \cap B) \times P(A \cup B) \quad \{\text{since } (A \cap B) \subseteq (A \cup B)\}$$

$$\therefore P(A \cap B)[1 - P(A \cup B)] = 0$$

$$\therefore P(A \cup B) = 1 \quad \text{or} \quad P(A \cap B) = 0$$

The following erratum was made on 11/Nov/2019

page 87 **REVIEW SET 2A** Question **11 a**, diagram should read:

11 a Let S represent those who were absent for at least one day due to sickness, and H represent those who missed some school because of family holidays.

$$\text{Let } n(S \cap H) = x$$

$$\therefore n(S \cap H') = 229 - x$$

$$\text{and } n(S' \cap H) = 111 - x$$

