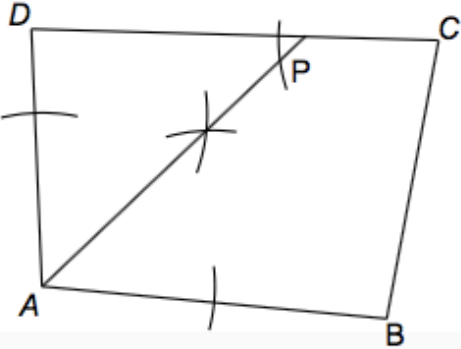
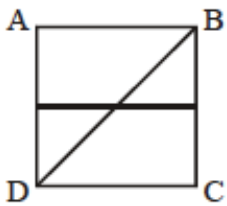


## Revision F3 (All topics) B [42] MARKSCHEME

1.

<p>One continuous arc, centre <math>A</math>, intersecting <math>AB</math> and <math>AD</math></p> <p>or</p> <p>Two arcs, each with same radius and centre <math>A</math>, intersecting <math>AB</math> and <math>AD</math></p>	M1	<p>Allow <math>\pm 2</math> mm for radii</p>
<p>Intersecting arcs with same radius and centres at the intersections with <math>AB</math> and <math>AD</math></p> <p>and</p> <p>angle bisector drawn</p>	A1	<p>Allow <math>\pm 2</math> mm for radii</p> <p>The radius of these arcs need not be the same as those used for M1</p>
<p>Arc of radius [5.8, 6.2] cm, centre <math>C</math>, intersecting their angle bisector and <math>P</math> labelled</p> 		<p>SC1 Arc of radius [5.8, 6.2] cm, centre <math>C</math> with no angle bisector attempted</p>



B3

*Line bisecting  $AD$   $B1$  at least 4 cm long*  
*Line bisecting  $ADC$   $B1$  at least 4 cm long*  
*Region shaded or marked  $B1$*

[3]

2.

$$2\frac{2}{3} - \frac{3}{4}$$

M1

$$\text{AND either } \frac{32}{12} \text{ or } \frac{9}{12}$$

$$\text{Or } \frac{14}{3} - \frac{11}{4}$$

$$= \frac{32}{12} - \frac{9}{12}$$

A1

$$\text{Or } \frac{56}{12} - \frac{33}{12}$$

$$2 - \frac{1}{12}$$

$$= \frac{23}{12} \text{ or } 1\frac{11}{12}$$

A1

$$\text{Or } 2\frac{8-9}{12} \quad \text{M1}$$

$$2\frac{-1}{12} \quad \text{A1}$$

$$1\frac{11}{12} \quad \text{A1}$$

$$\text{SCI } 2\frac{1}{12}$$

[3]

3.

$$4.5 \times 10^6$$

B2

$$\text{B1 } 4500000 \text{ or } 45 \times 10^5 \text{ oe or } 4.5^6 \text{ or } 4.5$$

[2]

4. (a) Correct substitution:  $S = 2\pi \times 4^2 + 2\pi \times 4 \times 7$  [M1]  
 $S = 276.5$  [A1]

(b) Correct substitution:  $500 = 2\pi \times 3.8^2 + 2\pi \times 3.8 \times h$  [M1]  
 Rearranging:  $500 - 2\pi \times 3.8^2 = 2\pi \times 3.8 \times h$  [A1]  
 $p = 17.1$  [A1]

5.

(i) C B1

(ii) A B1

(iii) D B1

[3]

6.

a = 60° B1

b = 110° B1

c = 130° B1

[3]

7.

- (a)  $6r = 8 - 2$  M1  
 $1$  A1
- (b)  $32$  B1
- (c)  $2s$  or  $1$  seen M1  
*Or  $7s - 5s$  or  $3 - 2$*   
*Or  $5s - 7s$  or  $-2s$  or  $2 - 3$  or  $-1$*
- $2s = 1$  A1  
*Or  $-1 = -2s$  then simplified*
- $\frac{1}{2}$  or  $0.5$  A1
- (d)  $12 - y = 3 \times 5$  M1  
*Or  $4 - y/3 = 5$*
- $12 - 15 = y$  M1 dep  
*Or  $-y/3 = 1$*   
*Allow =  $15 - 12$*
- $-3$  A1

[9]

8.

(a)		Position correctly shown on map	<b>3</b> 1 AO1.3a 1 AO2.3a 1 AO2.3b	<b>M1</b> for bearing 130 to 134 drawn at mast Y <b>M1</b> for bearing 250 to 254 drawn at mast Z	Ignore other constructions for <b>M</b> marks For full marks, position of 'mast X' must be unambiguously marked
(b)	(i)	1 250 000	<b>2</b> 2 AO1.3a	<b>B1</b> for [2 : ] 2 500 000	
	(ii)	122 to 125	<b>2</b> 1 AO1.3a 1 AO2.3a	<b>M1</b> for $12.5 \times$ <i>their</i> measurement between 9.8 and 10 <b>oe</b>	Method may be seen in stages e.g. Measurement = 9.9 $9.9 \div 2 = 4.95$ $4.95 \times 25 = 123.75$

9.

- $70 \text{ books} \sim 140\%$  B1
- $100\% \sim 70 \times \frac{100}{140}$  M1
- $= 50$  A1

[3]

10.

(a)	$0.6$ or $\frac{3}{5}$	B1	<b>oe</b> fraction Accept 36 m/s per min
	$\text{m/s}^2$	B1	<b>oe</b> Accept m/s per min only if their acceleration is 36 m/s per min
(b)	Chord from (0, 0) to (50, 30) and attempt at tangent to curve that is parallel to chord	M1	
	[11, 14]	A1	Must see working on the graph