

## Revision B F3 (Topics 3-6) [46] MARKSCHEME

1.

- (a)  $4v = 9 + 1$  (or 10) M1  
 $v = 2.5$  A1  
*oe*
- (b)  $3w + 2w = 19 - 4$  M1  
*oe Allow one sign error*
- $5w = 15$  M1dep  
*Gathering terms*
- $w = 3$  A1
- (c)  $x = 5 \times (11 + 2)$  M1  
 $x = 5 \times 11 + 10$
- 65 A1
- (d)  $4y + 12 = 9y - 18$  M1  
*Allow one error*
- $30 = 5y, -5y = -30$  A1ft  
*ft if M1 awarded and equation in form  $ay = b$  with no further errors*
- 6 A1ft  
*ft only if M1, A0 previously and their equation of form  $ay = b$  is solved correctly*

[9]

2.

- $(\angle ACB =) 180 - 2 \times 40$  M1  
*oe or 100 seen*
- $2 \times (\text{their } 100) + 40 + x = 360$  DM1  
*oe*
- 120 A1

[3]

3.

|     |  |
|-----|--|
| 252 | P1 For start to process eg. radius = $12 \div 4 (=3)$<br>M1 Method to find area of trapezium or semicircle or circle<br>P1 Process to find area of the shaded region<br><br>A1 251.7 - 252 |
|-----|--|

4.

- (a)  $155/500 \times 100$  M1  
*or  $155 \div 5$*
- 31 A1  
 $\frac{31}{100}$  scores M1A0
- (b)  $500 - 155 - 105$  M1  
 or 240
- their  $240 \div 3 (\times 2)$  M1 dep  
*oe*
- 160 A1

[5]

5. Expanding brackets:  $8x + 12 < 42$  [M1] oe  
 Rearranging:  $8x < 30$   
 $x < \frac{30}{8} = 3.75$  [M1] oe  
 Largest integer value is 3 [A1]

6.

(a)  $\frac{1}{\sqrt{8}} = \frac{\sqrt{8}}{8}$  M1

*Accept*  $\frac{1}{\sqrt{8}} \times \frac{\sqrt{8}}{\sqrt{8}}$  or  $\frac{1}{2\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$

$\frac{\sqrt{2}}{4}$  A1

(b)  $\sqrt{12} + \sqrt{108} = 2\sqrt{3} + 6\sqrt{3}$   
 $= 8\sqrt{3}$  M1

*Attempt to match square roots and collect terms*

$\frac{\sqrt{12} + \sqrt{108}}{\sqrt{8}} = 8\sqrt{3} \times \frac{\sqrt{2}}{4}$  M1

*Rationalising denominator (eg  $\frac{8\sqrt{3}}{2\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$ )*

$= 2\sqrt{6}$  A1

*M2 for  $2\sqrt{2} \sqrt{3}$*

[5]

7.

6:3 or numerical values in the ratios 2:3 and 6:3 M1

$(x + z) : y = 2 : 1$

$3x = 2y$

Finding 'z' e.g. 4 or appropriate numerical value A1

$x + z = 2y$

*If both correct. Accept  $x + z = 2y$*

1: 2 A1

*oe Accept words e.g. z is twice x.*

[3]

8.

|     |       |                          |   |  |
|-----|-------|--------------------------|---|--|
| (a) | 4900π | 2<br>1 AO1.2<br>1 AO1.3a | M1 for $\pi \times 70^2$ may be implied by 15393.8... |  |
| (b) | 3.5   | 2<br>2 AO1.3a            | M1 for $\frac{17150\pi}{\text{their '4900\pi'}}$      | FT from (a), provided (a) is a multiple of π |

9.

£59.50 is 70%

M1

$$1\% = \pounds \frac{59.50}{70}$$

*Full price £85 SC2*

$$\text{Discount} = 30 \times \pounds \frac{59.50}{70}$$

M1

$$= \pounds 25.50$$

A1

[3]

10.

$$(a) \quad \frac{TG}{25} = \tan 17^\circ$$

M1

$$TG = 25 \times \tan 17^\circ$$

M1

$$7.6(4\dots)$$

A1

$$(b) \quad \sin x = \frac{28.5}{35}$$

M1

*allow  $\frac{30}{35}$  here*

$$0.814(28\dots)$$

M1

*allow 0.857(14\dots)*

$$54 \text{ or } 54.5 (\dots) \text{ or } 55$$

*cao*

A1

[6]