

## Revision F3 (Topics 1-6) [34] MARKSCHEME

1.  
 $180 - 137$  M1  
 $43$  A1  
*Further working such as  $90 - 43 = 47$   
 invalidates both marks*

[2]

2.  
 (a)  $3\sqrt{2} + 4\sqrt{2}$  B1  
 $= 7\sqrt{2}$  B1  
*Either  
 Accept  $\sqrt{98}$*

[3]

3.  
 $2x - 20 = x + 12$  allow one error M1  
*or  $\frac{1}{2}x - \frac{1}{4}x = 3 + 5$  allow one error  
 or  $\frac{1}{4}x$  or 8 in  $\frac{1}{4}x = 8$*

- $x - 20 = 12$  or  $2x = x + 32$  A1  
*or  $\frac{1}{4}x = 8$*   
 $(x =) 32$  A1

[3]

4.  
 $4y(3y - 2)$  B2  
*B1 for one factor correct eg.  $4y(3y - 4)$   
 or for partial factorising eg.  $2y(6y - 4)$ ,  $y(12y - 8)$ ,  
 $4(3y^2 - 2y)$ ,  $2(6y^2 - 4y)$  (only these)*

[2]

5.  
 (a)  $6x^2 + x - 15$  M1,A1,A1  
*M1 for expanding (must have 4 terms)  
 A1 for at least 3 correct  
 A1 cao*

- (b) (i)  $y$  B1  
 (ii)  $y^{-1}$  B1

[5]

6.

$t = 3(y + 2a)$	M1	adding $2a$ to both sides or multiplying each term by 3
	A1	$t = 3(y + 2a)$ or $t = 3y + 6a$

7.  $\tan 45 = \frac{x}{15}$  [M1]  
 Replace  $\tan 45$  by 1 so  $1 = \frac{x}{15}$  [B1]  
 $x = 15$  [A1]

8.  $C = \pi \times 7$  M1  
 $C = 2\pi \times 3.5$  *Must substitute numbers.*  
 $C = \pi d$  or  $2\pi r$  is M0 until used.  
 NB  $\pi \times 3.5$  is M0 as wrong method ( $\pi r$ )  
 $= 21.98 - 22$  A1  
 $3.14 \times 7 = 21.98, \frac{22}{7} \times 7 = 22$   
 Length = 22.98 to 23 A1 ft  
*ft their 21.99 + 1 if M1 awarded.*  
 Height = 10 cm B1  
*Allow answers transposed.*

[4]

9.  $\sin 48^\circ$  or  $\cos 42^\circ$  seen Or indication that sine ratio is required M1  
 $51 \times \sin 48^\circ$  or  $51 \times \cos 42^\circ$  M1 dep  
 $\sqrt{51^2 - (52 \cos 48^\circ)^2}$   
 which is not divisible M2  
 37.9(...) A1  
 37.9 or 38 B1  
*ft their 37.9 NB Accuracy mark here*

[4]

10. (a)  $2500 \times 1.02 (= 2550)$  M1  
 $2\% \text{ of } 2500 + 2500$   
 their  $2550 \times 1.02^2$   
 Note:  $2500 \times 1.02^3$  scores M1M1 M1 dep  
 $2\% \text{ of their } 2550 + \text{their } 2550 (= 2601)$   
 $2\% \text{ of their } 2601 + \text{their } 2601$   
 2653.02 A1  
*Do not accept 2653 unless full value seen earlier*  
*(however answer of 2653 implies M2)*  
 SC1 Answer of 4320 or 2650  
 (b)  $221.45 = 103\%$  M1  
 $1.03$  seen  
 $\frac{221.45}{103} \times 100$  M1 dep  
 oe  
 215 A1  
*Beware of answer rounded to 215 from using 97%*  
 SC2 Answer 6.45

[6]