

Revision F3 (Topics 11-13) [41] MARKSCHEME

1.

- (a) Q and S B2
1 right + 1 wrong... B1
2 right + 1 wrong... B1
1 right + 2 wrong... B0

- (b) $\frac{56}{42}$ or $\frac{42}{56}$ oe M1
 or $\frac{27}{42}$ or $\frac{42}{27}$

their $(\frac{56}{42}) \times 27$
 or their $(\frac{27}{42}) \times 56$

- or $27 \div$ their $(\frac{42}{56})$ M1
 or $56 \div$ their $(\frac{42}{27})$

- 36 A1
Use of 1.3 \rightarrow 35.1 A0
Use of 1.33 \rightarrow 35.9 A1
Use of 1.333 \rightarrow 35.991 A1

[5]

2.

- (a) 0.3 and 0.7 correctly located on first pair of branches B1
 0.3 and 0.7 correctly located on both second pairs of branches B1

- (b) 0.3×0.7 M1

$0.3 \times 0.7 + 0.7 \times 0.3$
 ding exactly 2 correct products M1
or $2 \times 0.3 \times 0.7$
ft if unambiguous

- = 0.42 A1
If no working in b) ans to b) could \Rightarrow M1M1 from working shown in a)
or \Rightarrow M1 from working shown in a)
Method must be shown or clearly implied

[5]

3.

- (a) $6 - 3z$ seen M1

$5z = -2$ M1

$-2/5$ or -0.4 A1

- (b) $15x + 6y$ & $8x - 6y$ M1
 or $20x + 8y$ & $20x - 15y$

$23x = 46$ M1dep

$(-)23y = -69$

$x = 2$ A1

$y = -3$ A1

[7]

4.

(a) 200×0.34
68

M1
A1

Allow 68/200

(b) The last one or 0.32
Based on the highest number of spins hence more reliable

B1
B1

[4]

5.

<p>BP = PC (P midpoint of BC) Angle MBP = angle NPC (corresponding angles) Angle BPM = angle PCN (corresponding angles) Triangles [MBP and NPC] congruent by ASA.</p>	<p>4 1 A01.1 3 A02.4b</p>	<p>B3 for three facts with conclusion Or B2 for three facts with missing or unclear conclusion or for two facts with conclusion Or B1 for one fact</p>	<p>Accept any correct proof Each fact must be backed up with a reason for full marks</p>
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6.

(a) $0.6 \times 0.6 \times 0.6$

M1

= 0.216 or 27/125 or 21.6% *oe*

A1

(b) $(0.1 \times 0.1 \times 0.1)$ or $(0.1 \times 0.1 \times 0.2)$ *Either calculation*

M1

= $0.001 + 3 \times (0.002)$

M1

Pr (3, 3, 3) + 3 ways of getting 8 goals or 4 additions

= 0.007

A1

[5]

7.

<p>$9 + 3x + x - 5 + 2x$ or $6x + 4$ or $3x + x - 5 + 2x$ or $6x - 5$</p>	<p>M1</p>	<p><i>oe</i></p>
<p>their $(6x + 4) = 100$ or their $6x - 5 = 91$ or $6x = 96$</p>	<p>M1</p>	<p><i>oe</i> $\frac{9}{\text{their } (6x + 4)} = \frac{9}{100}$</p>
<p>$x = 16$</p>	<p>A1</p>	
<p>$\frac{11}{100}$</p>	<p>B1ft</p>	<p>ft their 16</p>

8.

(a)	Alternative method 1		
	10 ÷ 4 or 2.5 or 4 ÷ 10 or 0.4 or $\frac{1}{2} \times (18 + 10) \times 25$ or 350	M1	oe
	18 ÷ their 2.5 or 18 × their 0.4 or 7.2 or 25 ÷ their 2.5 or 25 × their 0.4 or 10	M1dep	oe
	$\frac{1}{2} \times (18 + 10) \times 25$ or 350 and $\frac{1}{2} \times (\text{their } 7.2 + 4) \times \text{their } 10$ or 56	M1dep	Must see working
	350 – 56 = 294	A1	Do not award without working seen
(b)	Alternative method 2		
	10 ÷ 4 or 2.5 or 4 ÷ 10 or 0.4 or $\frac{1}{2} \times (18 + 10) \times 25$ or 350	M1	oe
	(Area scale factor =) (their 2.5) ² or (their 0.4) ²	M1dep	
	their 350 ÷ (their 2.5) ² or their 350 × (their 0.4) ² or 56	M1dep	Must see working
	350 – 56 = 294	A1	Do not award without working seen
$\frac{18 - 10}{2}$ or 4	B1		
$\tan x = \frac{25}{\text{their } 4}$	M1		
[80.9, 81]	A1		