Terminal Unit Intermediate Tier Section A

1 (a) PQ drawn 8cm long W1 Allow ± 0.2 cm in lengths

FP drawn 9cm long W1

FQ drawn 7cm long W1 Wrong scale – 1 once
Incomplete triangle scores a maximum of W2

(b) (0)40° to (0)44° W1 f.t. from triangle (±2°)
Only f.t. if W3 **not** awarded in (a)

4

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2 (a) 6 points plotted correctly (± 1mm) W2 W1 for 3 correct

(b) Positive W1 Allow alternative statements

(c)(i) Ruled straight line of best fit drawn W1 Written paper 20 [3 to 10]
Written paper 70 [27 to 32]

(ii) 52 to 58 W1 f.t from their line only if W0 in (c)(i)
If no line drawn accept answers in given range

5

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3 (a)(i) 0.24 W1

(ii) 125 W1

(b) Attempt at $7 \div 8$ M1 Implied by figs 875 or 0.125

0.875 A1 Accept if later corrected to 0.88 or 0.9
Answer only W2

(c) $\frac{70}{200}(\times 100)$ o.e. or $70 \div 200$ M1 Implied by figs 35

35% A1 Answer only W2

(d) Writing over a common denominator M1 e.g. $\frac{2}{3}+\frac{1}{4}=\frac{8+3}{12}$
with 1 of 8 and 3 correct

Final answer $3\frac{11}{12}$ A2 A1 for $\frac{47}{12}$ or equivalent
Answer only W3

9

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4 (a) 44 W1 Accept embedded answers

(b) Final answer $9x+3y$ or $3(3x+y)$ W2 W1 for each or
W1 for $4x+3x+2x+2y+y$ or equivalent

(c) $5(2x-3)$ W1

4

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5 (a) 2.5 seen or implied W1

$20 \div$ a time M1

8 A1 Answer only W3

(b) $\frac{32}{5+3}(\times 5)$ M1 Implied by answer 12

20 A1 Answer only W2

5

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6 (a) (i) Use of angle of a triangle = 180° W1

Correctly derived equation W1 Must see 13 + 30 + 53 = 96

(ii) $2x = 180 - 96$ M1

42 A1 Accept embedded answers
Answer only W2

(b) 96 or 106 seen or explained W1 Accept 180 – 2× their x

No :
Angle at centre ≠ twice angle at circumference W1

6

7	(a)	$\frac{4y^2}{x}$ or $4y^2x^{-1}$	W2	W1 for each numerator and denominator
	(b)(i)	$(x-5)(x-2)$	W2	W1 for $(x \pm 5)(x \pm 2)$
		(ii) 5 and 2	W1	f.t. from factors Allow marks in one part if the other part blank
			5	
8	(a)	$x \times x = x^2$ or $3 \times 2x = 6x$	W1	Accept $6x$ and x^2 associated with correct areas
		Completion	W1	
	(b)	7 and 55	W2	W1 for each
	(c)	5 point plotted correctly	P1	f.t. from table Allow ±1mm in plotting
		Smooth curve drawn	C1	Must be parabola shape
	(d)	3.6 to 3.7	W1	f.t. from a curve if P1 not awarded in (c)
			7	
9	(a)	0.3 for the first red ball	M1	
		All correct	A1	
	(b)	$2 \times 0.7 \times 0.3$	M2	M1 for 0.7×0.3
		0.42	A1	A1 for 0.21 Answer only W3 for 0.42 W2 for 0.21
			5	

Total 50 marks

Terminal Unit Intermediate Tier Section B

10	3 sectors correct and labelled		W4	Allow ± 1% or ± 3° W3 for 2 correct and labelled or 3 correct unlabelled **or** W2 for 1 correct and labelled or 2 correct unlabelled **or** W1 for 20, 40, 25 and 15 or 72, 144, 90 and 54 seen
			4	
11	(a)	30	W1	
		Alternate or Z angles	W1	
	(b)	$360 \div 30$	M1	
		12	A1	Answer only W2
			4	
12	(a)	1.175×950 (= 1116....)	M2	M1 for 0.175×950 (=166.25)
		1116.25	A1	Answer only W3
	(b)	$1600 \div 1.45$ (= 1103.45)	M1	
		Their 1116.25 – their 1103.45	M1	Independent
		Paris : 12.80	A1	
		OR		
		Their (a) × 1.45 (= 1618.5625)	M1	
		Their [1618.5625 -1600] ÷ 1.45	M1	
		Paris : 12.80	A1	
				Answer only W3 for 12.80 W2 for 12.8 or 12.81
			6	
13	(a)	20.4	W2	W1 for figs 2038 to 2039 or W1 for 20.3 or 20.40 or 20 W1 for 217.12 or 10.65 seen

(b) 4.41×10^{6}	W2	W1 for figs 441 W1 for 4.4×10^{6}
	4	

14	(a) 882 seen	W1	
	1112.90 –(their 882 + 12.5) = [218.4]	M1	
	÷ 35	M1	
	6.24	A1	Accept on the bill Answer only W4
	(b) [Radius of semicircle] = 2.1 or [Diameter] = 4.2	W1	
	$\pi\times2.1^2(\div2)$	M1	Accept their radius used
	6.92... or 6.93 or 6.9	A1	
	Their 6.92 + (5.2×4.8)	M1	Dep on use of π After M0 M0 allow SC1 for 24.96 seen
	31.8 to 31.9	A1	Answer only W5 for 31.8 to 31.9 or W3 for 38.8 to 38.9
	9		

15	(a) Correct translation	W2	W1 for each direction or W1 for use of $\begin{pmatrix}-5\\-6\end{pmatrix}$ or W1 for correct translation of B
	(b)(i) $\frac{1}{2}$ or 0.5	W1	Condone ×
	(ii) (0 , 3)	W1	
	4		

16	(a) $7x-3x-2=1$ or $7x=3x+1+2$	M1	One correct step
	$4x=3$	M1	

	$\frac{3}{4}$ or 0.75	A1	Answer only W3
	(b) Multiplies equation {1} by 3 or 5 correct	M1	Accept 2 terms
	Adds or subtracts equations	M1	Accept 2 terms correct
	x = 5 and y = - 2	A1	Answer only W1
	6		

17	(a) (2 , 3) Condone ($2x$, $3y$)	W2	W1 for each
	(b) 14 and 4 seen	W1	
	$\sqrt{14^2+4^2}$ or $\sqrt{7^2+2^2}$	M1	
	14.5 to 14.6 7.2 to 7.3	A1	Answer only W0
	(c)(i) $\frac{Their14}{Their4}$	M1	
	3.5 or $\frac{7}{2}$ Condone $3.5x$	A1	Answer only W2
	(ii) $y=3.5x-4$ o.e.	W2	f.t. from their gradient W1 for $y=3.5x+-4$ $y=3.5x+c$ or $y=mx-4$ or $3.5x-4$
	9		

18	Tan 17.5 = $\frac{BM}{146}$	M1	
	BM = tan 17.5 × 146	M1	
	46 or 46.0	A2	A1 for 46.03....
	After A0 allow W1 for an answer to 2 or 3 significant figures if trig used.		
	Grads 41.1 to 41.2 scores A1		