Practice Tests Set 7 – Paper 1F mark scheme – Spring 2018

Qn		Working	Answer	Mark	Notes
1	(a) (b)		−12 −8 2 5 10 1.085 1.508 1.58 1.805	1 1	B1 cao B1 cao
2			$\frac{27}{100}$	1	B1 oe
3			2600	1	B1 cao
4			parallelogram	1	B1 for a parallelogram drawn with parallel sides
5			1	2	M1 for method to find halfway number, eg (−6 + 8) ÷ 2 or a number line with evidence of finding halfway value A1cao
6		$(4 \times 60) + (\frac{1}{2} \times 60)$	270		M1 for $(4 \times 60) + (\frac{1}{2} \times 60)$ A1 cao
7	(a)		17 40, 20 31, 9, 3	3	C1 for starting to interpret information, e.g. inserts 17 on diagram C1 for 20 and 40 on the diagram C1 for communicating all information correctly
	(b)		$\frac{3}{20}$	2	M1 ft for $\frac{a}{20}$ with $a < 20$ **or** $\frac{3}{b}$ with $b > 3$ A1 ft from (a) oe

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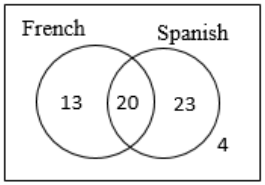
8	(a)	5 : 10 000 or 0.005 : 10	1 : 2000	2	M1 ignore any units shown A1 cao
	(b)	$\frac{96}{10}\times 5$ or $\frac{1}{"2000"}\times 96(\times 1000)$ oe	48	2	M1 A1 cao
9	(a)	320 : 500	16 : 25	2	M1 A1 or any correct unsimplified ratio
	(b)	640 ÷ (7 + 9) × 9 or 40 × 9	360	2	M1 A1 SCB1 for 280
10	(a)		Correct diagram	3	B1 13 and 20 in correct positions M1 43 − 20 (= 23) or 60 − 43 − 13 (= 4) A1 correct diagram
	(b)		$\frac{4}{60}$	1	B1 $\frac{4}{60}$ oe or ft Venn diagram for $\frac{"4"}{60}$
11	(i)		9.2 cm	3	B1 for answer in the range 9.0 to 9.4 cm inclusive
	(ii)		midpoint at 4.6 cm		B1 for midpoint shown within 4.5 to 4.7 inclusive
	(iii)		Perpendicular		B1 for perpendicular drawn anywhere on the line *PQ* so that the angle is between 88 and 92 degrees

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12			No, with supporting evidence	3	P1 for the start of a correct process, e.g. two of x, $2x$ and $2x+7$ oe or a fully correct trial, e.g. 5 + 10 + 17 = 32 for setting up an equation in x. eg. $x + 2x + 2x + 7 = 57$ or a correct trial P1 totalling 57, e.g. 10 + 20 + 27 = 57 (dep on P2) for at least one correct result and for a correct deduction from their answers found, e.g. Caroline has 20 C1 Thus it is impossible for all to have 20 since 60 books would be needed.
13	(a)		White = 36 Green = 6 Blue = 18	5	P1 for process to start to solve the problem, e.g. 600 ÷ 60, or 6 × 1.8 P1 for a complete process to find the total number of tiles (= 60) P1 for $\frac{3}{5} \times 60$ (= 36) P1 for (60 – 36) ÷ 4 A1 cao
	(b)		Correct statement	1	C1 e.g. Fewer tiles may be needed

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14	(a)(i) (ii)		Fixed charge The cost per minute	1 1	C1 for correct interpretation e.g. the starting price C1 for correct interpretation e.g. how much the price increases every minute
	(b)		$y = 1.5x + 0.5$	3	M1 for an attempt to calculate the gradient, with 2 correct values used, e.g. 7.5 ÷ 5, **or** y-intercept found M1 for gradient of 1.5 in an equation **or** $1.5x + 0.5$ A1 for the correct equation
15		$\sqrt{5^2 - 4^2} = 3$ $4 \times 8 = 32$ $32 + \frac{1}{2}(3 \times 8)$	44	5	P2 for $\sqrt{5^2 - 4^2}$ or for a height of 3 (P1 for $5^2 - 4^2$) P1 for process to find one area P1 for a complete process to find the total area A1 cao
16	(a) (b)		16 No	2 1	M1 for 360 ÷ 45 oe or 2 × 8 or Roach identified as 6 or Bream identified as 8 A1 cao B1 for 'No' and correct explanation, e.g. the pie charts only show that the proportions OR explains that she could be correct if the total number of fish is the same in each chart OR explains that we don't know if she is correct because the total number of fish is not known.

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17			Shape with vertices at (–1, 3), (0, 6), (2, 6), (1, 3)	1	B1 for correct shape in correct position
18		$x = 2.5 \times 6$	15	1	B1 cao
19			95, 69, 19	5	P1 for two of x, $5x$ and $5x - 23$ (where x is the smallest angle) P1 (dep) for equation summing their three angles to 180, e.g. $x + 5x + 5x - 29 = 180$ P1 (dep P1) for correct process to simplify their algebraic expression, e.g. $11x - 29$ (=180) P1 for correct process to solve their equation of the form $ax + b = 180$ P1 for three correct angles (order irrelevant)
20	(a)(i) (ii) (b)	$5^n \times 5^3 = 5^{10}$ **or** $\frac{5^n}{5^6} = 5$ **or** $\frac{5^n}{5^3} = 5^4$ **or** $5^{n+3} = 5^{4+6}$	7^{12} 4^{14} 7	1 1 2	B1 B1 M1 for a correct equation in n, e.g. $n + 3 = 10$ **or** $n + 3 - 6 = 4$ A1 cao
21			21	2	M1 3 or 7 identified as a common factor A1 cao

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22		525 ÷ 3	875	2	M1 A1 cao
23		3 + 5 + 7 or 15 90 ÷ (3 + 5 + 7) or 90 ÷ 15 or 6 or $\frac{7}{15}$ oe	42	3	M1 15 may be denominator of fraction or coefficient in an equation such as $15x = 90$ M1 dep A1 cao (oe)
24	(i) (ii)		$3x + 7$ 21	2 3	M1 for $x + x + 3 + x + 4$ A1 cao M1 for $3x = 54$ M1 for $x = 18$ A1 cao
25	(a) (b)		7.5×10^4 7.5×10^{-8}	1 2	B1 cao M1 for 7.5 $7.5 \times 10^4 \times 10^{-12}$ A1 cao
26			$2^3 \times 3^2 \times 5$	3	M1 for a correct start to a factor tree (2 correct branches) M1 for a fully correct tree or correct factors as a list A1 for $2^3 \times 3^2 \times 5$ oe

Suggested grade boundaries

	5	4	3	2	1
Paper 1F	**66**	**52**	**38**	**24**	**10**
Paper 2F	**49**	**39**	**29**	**19**	**10**
Paper 3F	**45**	**36**	**27**	**18**	**10**
Total	**160**	**127**	**94**	**61**	**30**