

Practice Tests Set 16 – Paper 2F-3F mark scheme, performance data and suggested grade boundaries

1	$5.75 \div 5 (= 1.15)$		3	M1 for finding the cost of one chocolate bar
	e.g. $(7.85 - 2 \times "1.15") \div 3$			M1 (dep on M1) for a complete method to find the cost of one packet of sweets
		1.85		A1 cao
				Total 3 marks

2	$(36 - 25) \times 7.45$ oe		3	M2 for a complete method (M1 for $36 - 25 (= 11)$ or for $W \times 7.45$ where W is their weight)
		81.95		A1
				Total 3 marks

3 (a)		ramen	soba	udon	Total	Correct table	3	B3 All 6 correct entries (B2 4 or 5 correct entries B1 2 or 3 correct entries)
	Boiled	18	<u>5</u>	<u>8</u>	31			
	Fried	<u>10</u>	12	7	<u>29</u>			
	Total	<u>28</u>	<u>17</u>	15	60			
(b)					$\frac{7}{60}$	1	B1 accept 0.11666... (accept 2 d.p. or better truncated or rounded) or 11.666...% (accept 2 s.f. or better truncated or rounded)	
								Total 4 marks

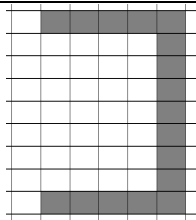
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4	e.g. $32.50 \times 180 (= 5850)$ or e.g. $0.94 \times 32.50 \text{ oe} (= 30.55)$		3	M1 for finding the total income or 94% of the cost of one ticket
	e.g. $0.94 \times "5850" \text{ oe}$ or " $5850" - 0.06 \times "5850" \text{ oe}$ or $180 \times "30.55"$			M1 for a complete method
		5499		A1
				Total 3 marks

5	$6 \times 100 (= 600)$ or $17.5 \div 100 (= 0.175)$		3	B1
	" $600" \div 17.5 (= 34.28\dots)$ or $6 \div "0.175" (= 34.28\dots)$			M1 ft incorrect conversion
		34		A1 cao
				Total 3 marks

6	$3 \text{ kg} = 3000 \text{ g}$ or $150 \text{ g} = 0.15 \text{ kg}$ or $180 \text{ g} = 0.18 \text{ kg}$ or $1350 \text{ g} = 1.35(0) \text{ kg}$		3	B1 may be seen used as part of a calculation
	$3 \times 150 + 5 \times 180 (= 1350)$ $3 \times 0.15 + 5 \times 0.18 (=1.35(0))$			M1 Could use their converted values
		1650		A1
				Total 3 marks

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7	(a)		Correct shape	1	B1	cao
	(b)		17, 21	1	B1	cao
	(c)		33	1	B1	cao
	(d)		The numbers of shaded squares are odd numbers	1	B1	Accept e.g. 50 is an even number or the sequence is all odd numbers or 49 is in the sequence so 50 can't be as it's only one more or 53 is the next number after 49 or 49 and 53 are in the sequence (so not 50) or nth term is $4n + 1$ and for 50 $n = 12.25$ / not an integer
Total 4 marks						

8	(b)	$15.5 \times 8 (=124)$ or $15.5 \times 8 \times x$	6.5	3	M1
		$15.5 \times 8 \times x = 806$			M1 dep
		$806 \div "124"$			A1
Total 3 marks					

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9	$0.5 \times (13.5 + 17) \times 10.4$	158.6	2	M1 for a complete method eg rectangle ± 2 triangles
				A1 allow 159
	Total 2 marks			

10		11 hours and 45 minutes	2	B2 for 11 hours and 45 minutes (B1 for 11 hours or 45 minutes)
Total 2 marks				

11	e.g. $\frac{180}{750} \times 100$ oe or 0.24×100		2	M1 for a complete method
		24		A1
Total 2 marks				

12	(a)		13	1	B1
	(b)	$160 \times 2 (=320)$ or “ 160×2 ” – 5 or “ $160 \times 2 - 5$ ” $\div 3$	105	2	M1 One correct inverse operation used
					A1
	(c)		$P = \frac{3n+5}{2}$	2	B2 oe (B1 for $\frac{3n+5}{2}$ oe or $P = 3n + 5 \div 2$ or for $P =$ a formula including n with 2 operations correct eg $P = 3n + 5$ or for $n = \frac{2P-5}{3}$ or $P = \frac{2n-5}{3}$)
Total 5 marks					

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13		$424 = 4n$	106	2	M1 For 424 or 324 + 225 – 125 with at most one error
					A1 SCB1 for 524 or 674
					Total 2 marks

14	(a)	$520 - 465 (= 55) \text{ or } \frac{520}{465} (= 1.118\dots)$	11.8	3	M1	
		$\frac{55}{465} \times 100 \text{ or } 100 \times ("1.118" - 1) \text{ oe}$			M1	
					A1 11.8 or better (11.827956...)	
	(b)	$0.12 \times 550 (= 66)$	484	3	M1 oe	M2 for 0.88×550
		$550 - "66"$			M1	
					A1	
					Total 6 marks	

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15	e.g. 0.7×20160 oe (= 14112) or 0.3×20160 oe (= 6048)		4	M1	
	e.g. “14112” $\div (9 + 5 + 2)$ (= 882) or $(20160 - “6048”) \div (9 + 5 + 2)$ (= 882)			M1	M2 for $\frac{9-2}{9+5+2} \times “14112”$ oe
	e.g. $9 \times “882” - 2 \times “882”$			M1	
		6174		A1	
				Total 4 marks	

16	438×0.12 (= 52.56) or $44.39 \div 0.92$ (= 48.25)		4	M1	
	438×0.12 (= 52.56) and $44.39 \div 0.92$ (= 48.25) or 438×0.12 (= 52.56) and “52.56” $\times 0.92$ (=48.355) or $44.39 \div 0.92$ (= 48.25) and “48.25” $\div 0.12$ (= 402.083...)			M1	
	“52.56” – “48.25” or “48.355” – 44.39 = 3.965 and “3.965” $\div 0.92$ or $438 - “402.083...”$ (= 35.916..) and “35.916” $\times 0.12$			M1 Dep on M2	
		4.31		A1	
				Total 4 marks	

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17	e.g. $1.5 \times 2.4 - (-5.6)$ or $1.5 \times 2.4 + 5.6$ or $3.6 + 5.6$ oe		2	M1 for a correct substitution
		9.2		A1 accept $\frac{46}{5}$ or $9\frac{1}{5}$
				Total 2 marks

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18	(a)		$70 < s \leq 80$	1	B1
	(b)	$10 \times 45 + 16 \times 55 + 19 \times 65 + 23 \times 75 + 12 \times 85$ or $450 + 880 + 1235 + 1725 + 1020 (= 5310)$		4	<p>M2 $f \times d$ for at least 4 products with correct mid-interval values and intention to add.</p> <p>If not M2 then award M1</p> <p>for d used consistently for at least 4 products within interval (including end points) and intention to add</p> <p>or</p> <p>for at least 4 correct products with correct mid-interval values with no intention to add</p>
		“5310” \div 80			<p>M1 dep on at least M1 allow division by their $\sum f$ provided addition or total under column seen</p>
			66.4		A1 accept 66.37 – 66.4
					Total 5 marks

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19	$ABD = 180 - 143 (= 37)$ or $AEJ = 76$ or $CED = 76$ or $ECD = 180 - 143 (= 37)$		3	M1	may be marked on diagram
	$180 - 76 - "37"$			M1	A correct calculation for EDC
		67		A1	
				Total 3 marks	

20	$360 - (59 + 115 + 68) (= 118)$		4	M1	angle values may be seen on diagram throughout
		$x = 62$		A1	from correct working
	<u>Angles</u> in a <u>quadrilateral</u> add up to 360. Accept "4-sided shape" <u>Angles</u> on a straight <u>line</u> add to 180° Base angles in an <u>isosceles</u> triangle (are equal)			B2	(dep on M1) for all correct reasons for their method
				(B1	(dep on M1) for 1 correct reason for their method)
				Total 4 marks	

21	6 hrs 39 mins = 6.65 (hrs) or $6\frac{39}{60}$ or $6\frac{13}{20}$ or $\frac{133}{20}$ or 399(mins)		3	B1	
	Average speed = $\frac{429}{6.65}$ oe eg $\frac{429}{399} \times 60$			M1	Use of $S = D \div T$ (use of their time in hours) [Allow $\frac{429}{6.39}$ if B0 awarded]
		64.5		A1	awrt 64.5
				Total 3 marks	

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22	(a)	for $0.035 \times 40\,000$ oe (= 1400) or $1.035 \times 40\,000$ oe (= 41 400)	OR		3	M1 for finding 3.5% or 103.5% of 40 000	OR M2 for $40\,000 \times 1.035^3$ or $40\,000 \times 1.035^4$ (= 45 900.92)
		$1.035 \times$ “41 400” oe (= 42 849) $1.035 \times$ “42 849” oe (= 44 348.72)	$40\,000 \times 1.035^3$			M1 for completing method to find total amount in the account	(M1 for $40\,000 \times 1.035^2$ (= 42 849))
				44 349		A1 accept 44 348 – 44 349	
						SC: if no other marks gained award M1 for $0.105 \times 40\,000$ oe or 4200 or 44 200 accept $(1 + 0.035)$ as equivalent to 1.035 throughout	
	(b)	e.g. $30\,481 \div (1 - 0.065)$ or $30\,481 \div 0.935$			3	M2 for a complete method (M1) for $30\,481 \div (100 - 6.5)$ (= 326) or $(100 - 6.5)\% = 30\,481$ or $93.5\% = 30\,481$ or e.g. $(1 - 0.065)x = 30\,481$	
				32 600		A1	
							Total 6 marks

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23		$4x + 6x + 11 + 9x - 18 = 126$ oe eg $19x - 7 = 126$ or eg $(126 + 18 - 11) \div 19$		4	M1 A correct equation or a correct calculation for x
		$x = 7$			A1
		$0.5 \times (9 \times \text{"7"} - 18) \times (4 \times \text{"7"})$ $(0.5 \times 45 \times 28)$			M1 Dep on M1
			630		A1 cao
					Total 4 marks

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Qn	Paper	Question	Mean score	Max score	Mean %	Edexcel averages: scores of candidates who achieved grade:						
						ALL	5	4	3	2	1	U
1	1F	Q10	2.54	3	85	2.54	2.89	2.78	2.41	2.00	1.03	0.64
2	1F	Q03	2.62	3	87	2.62	2.88	2.75	2.53	2.32	1.71	0.14
3	1F	Q08	3.39	4	85	3.39	3.80	3.64	3.25	2.81	1.81	0.28
4	1F	Q13b	2.43	3	81	2.43	2.90	2.73	2.27	1.58	0.72	0.21
5	1F	Q06	2.26	3	75	2.26	2.79	2.46	2.09	1.33	0.76	0.07
6	2F	Q08	2.34	3	78	2.34	2.77	2.44	2.21	1.68	0.92	0.00
7	1F	Q05	3.15	4	79	3.15	3.50	3.22	3.01	2.80	2.10	0.64
8	2F	Q14b	1.96	3	65	1.96	2.79	2.25	1.36	0.51	0.25	0.00
9	2F	Q14a	1.25	2	63	1.25	1.75	1.42	0.89	0.35	0.22	0.00
10	1F	Q11	1.31	2	66	1.31	1.67	1.41	1.07	0.81	0.48	0.43
11	1F	Q13a	1.23	2	62	1.23	1.72	1.34	0.97	0.41	0.22	0.14
12	2F	Q05	3.12	5	62	3.12	4.12	3.25	2.58	1.64	0.73	0.11
13	2F	Q07f	1.14	2	57	1.14	1.53	1.26	0.89	0.43	0.35	0.22
14	2F	Q17	3.47	6	58	3.47	4.73	3.75	2.72	1.50	0.64	0.22
15	1F	Q17	2.14	4	54	2.14	3.29	2.40	1.22	0.50	0.17	0.07
16	2F	Q12	2.13	4	53	2.13	2.99	2.26	1.53	0.95	0.40	0.11
17	1F	Q12b	1.09	2	55	1.09	1.59	1.11	0.87	0.40	0.02	0.00
18	1F	Q18	2.56	5	51	2.56	4.03	2.68	1.56	0.50	0.15	0.00
19	2F	Q11	1.48	3	49	1.48	2.34	1.55	0.76	0.29	0.24	0.00
20	1F	Q09	1.66	4	42	1.66	2.66	1.64	0.97	0.46	0.12	0.00
21	2F	Q15	1.33	3	44	1.33	2.10	1.20	0.88	0.42	0.17	0.00
22	1F	Q23	1.82	6	30	1.82	3.27	1.58	0.79	0.29	0.04	0.00
23	2F	Q10	1.14	4	29	1.14	2.45	0.72	0.08	0.04	0.00	0.00
			47.56	80		47.56	64.56	49.84	36.91	24.02	13.25	3.28

Suggested grade boundaries

Grade	5	4	3	2	1
Mark	57	43	30	19	8