Countdown to your final Maths exam ... part 3 (2018)

Examiners Report & Markscheme

Mark Scheme

Q1.

Question	Working	Answer	Mark	Notes
		$\dfrac{27}{100}$ oe	B1	

Q2.

PAPER: 5MB2H_01

Question	Working	Answer	Mark	Notes
		350	3	M1 for finding 30% of 500 (=150) M1 dep for subtraction of discount from 500 A1 cao OR M1 for $1 - 0.3$ ($= 0.7$) M1 dep for $500 \times$ "0.7" A1 cao

Q3.

PAPER: 1MA0/1F

Question	Working	Answer	Mark	Notes
	0.25, $\dfrac{3}{10}$, 0.32, 35%, $\dfrac{2}{5}$	Correct order	2	M1 for conversion to decimals with one error or conversion to percentages with one error or conversion to fractions with a common denominator with one error or correct order with one error or correct in reverse order A1 for correct order in any format

Q4.

PAPER: 1MA0/2F

Question	Working	Answer	Mark	Notes
		6 : 5	4	M1 for $\dfrac{2}{3} \times 165$ oe (= 110) [black counters] M1 (dep M1) for $\dfrac{40}{100} \times$ "110" oe (=44) [where 110 is their black counters] M1 (dep M2) for (110 − "44") : 55 or 66 : 55 or a reversed ratio A1 cao OR M1 for 2 : 1 M1 for $2 \times$ "$1 - 0.4$" or 1.2 M1 (dep M2) for "1.2" : 1 A1 cao OR M1 for correct method to find proportion of black counters left in the bag eg $\dfrac{60}{100} \times \dfrac{2}{3}$ ($= \dfrac{120}{300}$) M1 for correct method to find proportion of white counters in the bag ie $\dfrac{1}{3}$ oe M1 (dep M2) for correct method to find ratio after eg "$\dfrac{120}{300}$" : "$\dfrac{1}{3}$" A1 cao

Q5

Paper 1MA1: 1F				
Question	Working	Answer		Notes
(a)		$\dfrac{17}{35}$	M1 A1	for common denominators with at least one numerator correct
(b)		$\dfrac{20}{9}$	M1 A1	for $\dfrac{5}{3} \times \dfrac{4}{3}$ or $\dfrac{20}{12} \div \dfrac{9}{12}$

Q6.

Question	Working	Answer	Mark	Notes
	10% = 6 6 × 4 = 24	24	2	M1 40 ÷ 100 × 60 oe or any complete method, eg 10% = 6, 6 × 4 A1 cao SC B1 for 36 or 84

Q7.

Question	Working	Answer	Mark	Notes
(a)		0915	1	B1 for 0915 or 9.15am or other times that identify the train: 0930, 0955, 1040
(b)	0930-0800 = 1h30 or 90 min 1040-0915 = 1h25 or 85 min 1152-1030 = 1h22 or 82 min	82	3	M1 for an intention or attempt to work out the time of one train: eg 0930-0800 (=1h30oe) or 1040-0915 (=1h25oe) or1152-1030 (=1h22oe) M1 for an attempt to work out the time of all three trains; OR finding the difference between time duration s of at least two trains; OR stating the duration of at least one train correctly, with an attempt at another train duration ; OR stating two durations correctly. A1 82 or 1 h 22 min SC: B2 for 1f 22min stated incorrectly eg 1:22, 1.22, 122
(c)		45	1	B1 cao

Q8.

PAPER: 1MA0/1H				
Question	Working	Answer	Mark	Notes
*		Bathroom Mart and correct figures	4	M1 for $\dfrac{1}{3} \times 1500 \, (= 500)$ or $\dfrac{2}{3} \times 1500 \, (= 1000)$ M2 for a correct method to reduce 1500 by 60% and then by a further 15% eg $1500 \times$ "0.4" $\times$ "0.85" (= 510) oe (M1 for method to find 60% or 40% of 1500 e.g. $\dfrac{60}{100} \times 1500 \, (= 900)$ C1 for 510 and 500 with a correct conclusion.

Q9.

PAPER: 5MB3F_01				
Question	Working	Answer	Mark	Notes
*		Tymes shop	3	M1 for 80 − 18 (= 62) or for method to reduce 80 by 20% oe (= 80 − 16 = 64) A1 for 62 and 64 C1 for comparison using 62 and 64 OR M1 for method to find 20% of 80 (=16) A1 for 16 C1 for comparison using 16 and given 18 OR M1 for writing £18 as a % of £80 (= 22.5%) A1 for 22.5% C1 for comparison using 22.5% and 20%

Q10.

5MB1H/01 June 2015				
Question	Working	Answer	Mark	Notes
		32.35	3	M1 for $109 \times \dfrac{15}{100}$ (=16.35) or 0.85 oe M1 (dep M1) for 109 − "16.35" or $109 \times \dfrac{85}{100}$ (=92.65) or 125 − "92.65" A1 cao

Q11.

Question	Working	Answer	Mark	Notes
*	2329×0.9 =2096.1 2147×0.95 =2039.65 OR 4658×0.9 =4192.2 4294×0.95 =4079.3	Royal European	5	M1 for use of 2329 or 2147 (or sight of 4658 or 4294) ie selection of correct column M1 for attempting to calculate the discount for both their figures eg 2329×0.1 (=232.90) oe AND 2147×0.05 (=107.35) oe; 4658×0.1 (=465.8) oe AND 4294×0.05 (=214.7) oe) OR for attempting to find the discounted price for one eg 2329×0.9 (=2096.1) oe or 2147×0.95 (=2039.65) oe or 4658×0.9 (=4192.2) oe or 4294×0.95 (=4079.3) oe M1 for attempting to find the discounted price for both eg 2329×0.9 (=2096.1) oe AND 2147×0.95 (=2039.65) oe; 4658×0.9 (=4192.2) oe AND 4294×0.95 (=4079.3) oe A1 for 2096(.1) and 2039(.65) OR 4192(.2) and 4079(.3) figures rounded or truncated. C1 (dep on at least M1) for a statement deducing the cheapest company, but figures used for the comparison must also be stated somewhere, and a clear association with the name of each company.

Q12.

Paper 1MA1: 1F				
Question	Working	Answer		Notes
		75	P1	for start to process eg. linking 20% with 15 or 100 ÷ 5 (= 20)
			A1	

Q13.

PAPER: 5MB2F_01				
Question	Working	Answer	Mark	Notes
		$\frac{8}{9}$	2	M1 for using a suitable common denominator with at least one of two fractions correct A1 for $\frac{8}{9}$ or equivalent fraction

Q14.

Paper 1MA1: 2F				
Question	Working	Answer		Notes
		0.4375	B1	cao

Q15.

		Working	Answer	Mark	Notes
	(a)		0.5	1	B1 cao
	(b)		¾	1	B1 for ¾ oe eg $^{75}/_{100}$
	(c)		$^{19}/_{30}$	1	B1 for $^{19}/_{30}$

Q1. No Examiner's Report available for this question

Q2. This proved to be a good opening question with the most students scoring all 3 marks. The most common error was to just write down the discount of £150 as the answer.

Q3. This question was well understood with almost all students being able to gain one mark for attempting to write all the numbers in the same form or for placing 4 of the numbers in the correct order. Of all the conversions students had the most difficulty with converting $\frac{2}{5}$ to a decimal or percentage.

Q4. There were many who failed to read this question properly, as evidenced by the sizeable number who started with finding 40% of 165, or finding 165 ÷ 2. Many proceeded to state that 44 were taken from the bag but only the more able could link 44 to 66 and 55 and then go on to write this as a ratio. Of those who got to 66:55, many then either failed to simplify, or wrote their ratio the wrong way around.

Q5. No Examiner's Report available for this question

Q6. The vast majority of candidates (90%) scored full marks here. About 5% of candidates subtracted £24 from £60 and gave £36 as their answer or added the £24 to give £84. In this functional maths question, examiners were unable to award full marks for this.

Q7. Candidates sometimes misread part (a), giving the arrival time of their train rather than the departure time. Most were able to pick the correct train.

In part (b) some made an incorrect assumption that they all took the same time, and only worked out the time for the first train. Poor performance was seen from those candidates who attempted to work out the three separate durations for each train; more successful were those who worked out the duration using the departure and arrival times only. Clear working out facilitated the award of method marks. Far too many candidates lost a mark in not presenting their answer using correct notation. Though the answer line stated "minutes", answers shown as 1 hour 22 minutes were accepted for full marks. But too many candidates wrote answers such as 122 (minutes), 1:22, 1.22, etc., completely oblivious to the need to differentiate between the 1 and the 22 in terms of time units.

There were also far too many incorrect answers given in part (c), with many misreading the question as a requirement to write ¾ as a decimal (0.75).

Q8. Most students scored some marks for this question. However, many students showed a poor understanding of the order of the steps required to work out the price for Mega Bathrooms. Some just reduced the price by 75% in one step. More often those who were successful in finding 60% of 1500 then made the mistake of either calculating 15% of this value (900) or calculating 15% of 1500. A minority of students were able to reduce 1500 by 60% and then by a further 15%, for Mega Bathrooms. For Bathroom Mart some students tried to change $\frac{1}{3}$ or $\frac{2}{3}$ into a percentage without success. Common errors were $\frac{2}{3}$ = 75% or calculating $\frac{2}{3}$ of the price and failing to realise that they then needed to subtract this from the original price. Centres should encourage students to work with simple fractions as division by 3 is far simpler than trying to calculate 66.6% (or better) of any figure, especially without a calculator. Centres should also encourage candidates to show full working when using the breakdown method for percentages. It was pleasing to see that almost all students wrote their conclusion clearly.

Q9. Most gained the mark for the basic reduction of £18. But again there were a surprising number who were unable to work out the percentage reduction. For some this was because of a division by 20, but some spoilt their calculation by working with the actual reduction, rather than the reduced price. As with all QWC questions it was necessary to give a concluding statement at the end. This was not done by all students.

Q10. Nearly all candidates demonstrated an ability to work out percentages (though there remain a

minority who incorrect divide by 15) and so gained the first mark in the solution. But too many failed to gain any further marks since they failed to rad the question properly. Stating the costs without finding the difference, discounting the Saturday (or both days), or stating the sum of the costs were all common errors seen in working.

Q11. A very practical question requiring a detailed answer. Ordering and setting out of working is very important so that examiners can see what is being developed. Choice of the correct column to work with was important at the outset. Whether the calculations were done for 1 or 2 people was not important, as many recognised. The main discriminator was whether a candidate could work out a percentage, which was essential for developing the solution to the problem. The conclusion was recognising which company was the cheapest, through a statement given at the end of the problem, but candidates also had to demonstrate through their working how they had arrived at their conclusion.

Q12. No Examiner's Report available for this question

Q13. A good proportion of the students were able to add the two fractions correctly. The majority of those who attempted to use a suitable common denominator were successful although some made errors when writing the fractions to a common denominator. Many students, however, did not appreciate the need for a common denominator and the most common incorrect answer was $\frac{6}{12}$, from adding the numerators and adding the denominators.

Q14. No Examiner's Report available for this question

Q15. Fractions often cause problems on a foundation paper but it was pleasing to see some good responses to this question. Many candidates wrote 1.2 instead of 0.5 as the decimal equivalent of $^1/_2$ whilst $^5/_7$ or $^7/_5$ was often seen instead of $^3/_4$ or $^{75}/_{100}$ or equivalent when the fractional equivalent of 0.75 was asked for. Interestingly about 4 out of 5 candidates could write 19 out of 30 as a fraction.