



Countdown to your final Maths exam ... part 2 (2019)

Markscheme & Examiners Report

Q		Working/Answer	Marks	Notes
1		80	1	B1
2		60	1	B1 cao
3		$32/100 \times 675 = 216$ (oe) or $100 - 32 (=68)$ $675 - "216"$ or $0.68 \text{ c } 675$ 459	3	M1 oe M1 A1 cao
4		$45/100 \times 300 (=13.5)$ or $104.5/100 \times 300 (=313.5)$ oe $50 \div "13.5" (=3.7)$ or at least 3 repeated addition of "13.5" 4	3	M1 M1 cao SCBI for $1.045^n \times 300$
5		$30/100 \times 210$ or 0.3×210 or $21+21+21$ 63	2	M1 oe A1 cao
6		$2500 + 2500 \times 3.5/100 =$ $2500 + 87.50 = 2587.50$ $2587.50 + 2587.50 \times 3.5/100 = 2587.50$ $+ 90.5625$ 2678.06 (2678.10, 2678.07)	3	M1 oe M1 (dep) A1 cao
7		Method to find 3.5% (14) $"14" \times 5 =$ 70		M1 M1 (dep) A1 cao (SCB2 for 470 or 320 if not other marks awarded)
8	a	$75/100$	1	B1 oe
8	b	$81/1350 \times 100$ 6	2	M1 oe A1
9		$2 \times 462 + 251 = 1175$ $0.95 \times 1175 = 1116.25$ $2 \times 485 + 218 = 1188$ $1188 - 75 = 1113.00$ Jetstream	6	M1 for cots for either HA or Jetstream M1 for attempt to calculate costs M1 (ft) for correct method to

				calculate discount for one company A1 1116.25 and 1113.00 C1 for correct conclusion												
10		$35/100 \times 40 = 40$ $40/8 \times 3 = 15$ A1	4	Several methods exist-comparing marks, decimals or fractions. M1 to convert 1 person's scores into the same comparison unit M1 to convert 2 peoples scores into the same comparison unit A1 to 3 comparable figures. C1 for correct conclusion												
11		<table><tr><td></td><td>BS</td><td>Bank</td></tr><tr><td>Interest</td><td>2436</td><td>2550</td></tr><tr><td>Total</td><td>42436</td><td>42550</td></tr><tr><td>%</td><td>1.0609</td><td>1.06375</td></tr></table>		BS	Bank	Interest	2436	2550	Total	42436	42550	%	1.0609	1.06375	4	M1 for 3% of 40000 M1 for evidence of compound interest A1 2436 or 42436 C1 correct decision FT
	BS	Bank														
Interest	2436	2550														
Total	42436	42550														
%	1.0609	1.06375														
12		$1.15 \times 2000 (=2300)$ 1.2×2300 2530	3	M1 to find amount at the end of year 1 M1 (dep) for a correct method for end of year 2) A1 cao												
13		283 or 285 Cost of 2 adults one-way or 1 adult both ways Calculating child fare (75% of adult) for one or both journeys Total cost for 2 adults and 1 child 1562 or 38 Yes (supported)	6	B1 M1 M1 M1 A1 C1 (needs £ sign)												
14		$0.8 \times 0.8 (=0.64)$ $1 - "0.64" = (0.36)$ 36% depreciation	3	M1 M1 C1												
15		Linking 20% with 15 or $100/5 (=20)$ 75	2	P1 A1												

Q1. No Examiner's Report available for this question

Q2. No Examiner's Report available for this question

Q3. No Examiner's Report available for this question

Q4. Many students correctly found 4.5% of 300. However not all could then divide their answer into 50 or

repeatedly add to find out the number of years required. A few students used compound interest and there was a special case for this approach but centres are encouraged to ensure that students check they have answered the question asked.

- Q5. This question attracted a good proportion of correct answers, though 70 was an often seen incorrect answer obtained from $210 \div 3$ or from $210 \div 30 = 70$. Examiners were left wondering whether a large number of students had equated 30% with one third. Some students reduced the number of counters by 30%, giving 147 as their final answer. This question was not always attempted.
- Q6. This question was a good discriminator. There were a good number of fully correct solutions but more frequently students scored only part or no marks because they did not fully understand the concept of compound interest or were unable to show a correct method for calculating $3\frac{1}{2}\%$ of a quantity.
- Q7. No Examiner's Report available for this question
- Q8. Part (a) was well answered although a number of candidates wrote $75/100$ rather than $75/200$ or its equivalent. Candidates struggled to answer part (b) correctly with many candidates either doing a partial calculation such as $81 \div 1350 = 0.06$ or a completely incorrect calculation such as $850 \div 81 = 16\%$ or 16.7% . Others did not read the question properly and found the percentage of the students who were present!
- Q9. Candidates showed understanding of what was required with many candidates scoring 4 or 5 marks. Most of these candidates obtained £1113 cost for Jetstream Airlines but had difficulty working out the 5% discount for Highway Airlines. Some candidates did not use the costs for the correct week. Candidates should be encouraged to circle the correct week on the given tables to help them with their calculations.
- Q10. Candidates seemed to be aware that they needed to convert to a common format, with the most common method being to convert all the marks to 'out of 40'. Many candidates found either the 14 or 15. The most problematic conversion was finding $\frac{3}{8}$ of 40 with the common error seen being 3×8 , giving Wendy a winning score of 24. Errors in calculating 35% of 40 came from attempting to multiply by 35 then divide by 100. More popular, and for many it proved easier, was to calculate 35% by doing $10\% + 10\% + 10\% + 5\%$. Any errors here were in finding the 5%. Percentage comparison was the least seen method, and was done with little success. Working and conclusions were generally well presented, although some did not make clear which mark went with which person. In some instances candidates found the marks for Salma or Wendy, failing to realise that a comparison could only be made when all three had been converted into the same form.
- Overall, 24% scored all 4 marks and 50% failed to score. 11% of candidates scored 1 mark for showing a correct method for one conversion.
- Q11. Generally a well answered question with many good concluding statements seen. The majority of candidates demonstrated sound compound interest calculations, with errors mainly seen in the work of those who chose to use multipliers (eg 1.3 rather than 1.03). A few spoilt their solution by using £4000 instead of £40000
- Q12. This was a standard compound interest type of task and many candidates were able to work out the correct answer. The most common error was to calculate 15% of £2000 and then 10% of £2000, before adding the answers together. These candidates scored just one mark.
- Q13. This question was very well attempted. Many candidates had a good structure to the way they presented their answers and invariably these candidates tended to be the most successful. The majority of candidates identified the correct flight costs for the adults and worked out either the total cost for two adults one way or for one adult there and back.

The biggest stumbling block proved to be calculating a child fare as 75% of an adult fare. Many candidates did this incorrectly, sometimes showing no method, and others tried to calculate 75% of the cost of two adults one way despite the fact that this made the child fare more expensive than the adult fare. Some candidates correctly found the percentage but then went on to subtract it from the total (taking the child fare to be 75% off an adult fare rather than 75% of the adult fare). A surprising number of candidates tried to deduct the 75% in some way from the total cost of the adults, making the holiday cheaper if a child went too than if only two adults went. Many candidates did get as far as finding a total cost for the flights but the final mark was often lost, either because no answer was given to the question ('Do they have enough money for the flights?') or because the total cost was given without a £ sign.

Q14. A well answered question in which students preferred to select a value for the motor bike, and then proceeded to show how the depreciation differed for a simple, or compound approach. With a clear comparison at the end this could attract full marks. Lengthy expositions without any mathematical calculation, on the other hand, gained little credit.

Q15.No Examiner's Report available for this question