

1. Darren says

I can run 100 m in 15 seconds, so I should be able to run 800 m in 120 seconds.

Do you think that he would take more or less than 120 seconds to run 800 m?
Explain your answer, with reference to any assumptions Darren has made.

[3]

2. Six equations are shown below, each labelled with a letter.

A
 $y = -6x$

B
 $x = \frac{1}{6}y$

C
 $y = \frac{-3}{x}$

D
 $x = \frac{6}{y}$

E
 $y = 6x$

F
 $y = \frac{2}{x} + 2$

Choose from the letters above to make this statement true.

Equation _____ and equation _____ each show x is inversely proportional to y .

[2]



3(a).

Harry needs dollars to go on holiday.
He can buy \$50 for £40.

How much will \$720 cost at the same rate?

£ [2]



(b). Tony returns from holiday with these notes.

Note	Number of notes
€50	2
€20	4
€10	9
€5	12

The exchange rate is £1 = €1.17.

Work out how much he will get in total when he changes these notes.

£ [4]



4.

q is directly proportional to r .

q is 68 when r is 20.

Work out q when r is 25.

----- [2]

END OF QUESTION PAPER

Question			Answer/Indicative content	Marks	Guidance
1			He has assumed he can run 800 m at the same speed as he can run 100 m, but he will run 800 m at a slower speed, therefore it will take him more than 120 s	3	B1 for correct reference to Darren's assumption OR $\frac{100}{15} = \frac{800}{120}$ soi B1 for 'his speed will be slower over 800 m' oe
			Total	3	
2			C and D	2	B1 for each
			Total	2	

Question		Answer/Indicative content	Marks	Guidance
3	a	576	2	<p>M1 for [$\\$1=$] $40 \div 50$ or $[0].8$ or $720 \div 50$ soi $14.4[0]$ or $50 \div 40$ or 1.25 oe</p> <p>eg [$\\$]50 is [\pounds][40] (process)</p> <p>100 is [80] ($\times 2$) 200 is [160] ($\times 2$) 20 is [16] ($\div 10$)</p> <p>And sum 200, 200, 200, 100 and 20</p> <p>Examiner's Comment This question was generally not answered well. Some good, efficient methods were seen in this part, however too many incomplete, time consuming and inefficient pencil-and-paper methods were used, such as equating \$50 to £40 and then doubling in long lists to reach \$700 (this method usually broke down because candidates could not deal with the final \$20). Other candidates simply subtracted £10, as the given difference was 10, to respond with £710. A number of candidates divided 50 by 40, but then multiplied 720 by 1.25.</p>
	b	282 or 282.03 or 282.04 or 282.05 final answer	4	<p>M1 for multiplying four note values by the correct number of notes soi by values shown in final column of scheme</p> <p>Find total of euros $50 \times 2 (= 100) \div$ $1.17 (=85.47\dots)$ $20 \times 4 (= 80) \div 1.17$ $(=68.37\dots)$ $10 \times 9 (= 90) \div 1.17$ $(=76.92\dots)$ $5 \times 12 (=60) \div 1.17$ $(=51.28)$</p>

Question			Answer/Indicative content	Marks	Guidance
					<p>M1 for dividing a value in euros by 1.17 so by values shown in final column of scheme</p> <p>M1 for adding four sums of money of the same currency (one from each note value)</p> <p>Find each denomination in £ $50 \div 1.17 (=42.73\dots)$ 42.73 or 42.74 $20 \div 1.17 (=17.09\dots)$ 17.09 or 17.10 $10 \div 1.17 (=8.54\dots)$ 8.54 or 8.55 $5 \div 1.17 (=4.273\dots)$ 4.27 or 4.28</p> <p>$42.74 \times 2 (=85.48)$ $17.09 \times 4 (=68.36)$ $8.55 \times 9 (=76.95)$ $4.27 \times 12 (=51.24)$ Total = 282.03</p> <p>Examiner's Comment In this part, few candidates realised that this question, at least at the start, could be treated as a mean from a frequency table. A large number of candidates chose to change each denomination of note to pounds, then multiply each result by the number of notes and add these values, rather than find the total number of euros and then change. Where inefficient methods were used, there were also a significant number of numerical errors. A common error was to multiply by 1.17 at the end rather than divide. A number of candidates rounded inappropriately, losing accuracy marks. It was helpful to examiners for candidates to label, or clearly show, stages in the method so this could easily be followed and rewarded.</p>
			Total	6	

Question			Answer/Indicative content	Marks	Guidance
4			85	2	<p>M1 for $\frac{68}{20}$ soi by 3.4</p> <p>Examiner's Comments</p> <p>Many candidates scored the mark in part (a) as they understood that the line should start from, or go through, the origin. In part (b) some candidates had a good understanding of proportion and the need to find a scale factor (k). Those that obtained 3.4 invariably went on to correctly give the final value as 85. Incorrect responses usually involved some manipulation of the three figures given in the question and invariably arrived at $68 - 20 + 25 = 73$ as the answer. This question was not attempted by a significant number of candidates.</p>
			Total	2	