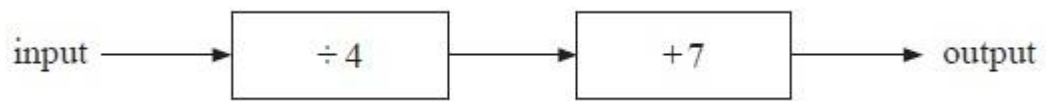


Q1.

Here is a number machine.



Complete this table for the number machine.

Input	Output
8	9
12
.....	27

(Total for Question is 2 marks)

Q1.

PAPER: 1MA0_2F				
Question	Working	Answer	Mark	Notes
		(12) 10	1	B1 cao
		80 (27)	1	B1 cao

Q2.

Michael writes down 4 different factors of 60
He adds the 4 factors together.
He gets a number greater than 20 but less than 35
What 4 factors could Michael have written down?

(Total for Question is 3 marks)

Q2.

Question		Working	Answer	Mark	Notes
			eg. 10, 12, 5, 2	3	M1 for at least 2 factors of 60 clearly identified M1 for 20 < sum of '4 distinct natural numbers' < 35 A1 cao

Q3.

Pat and Julie share some money in the ratio 2 : 5
Julie gets £45 more than Pat.

How much money did Pat get?

£.....

(Total for Question is 3 marks)

Q3.

Question	Working	Answer	Mark	Notes																																																																
	<p>$45 \div (5 - 2) (=15)$ '15'$\times 2$</p> <p>OR $45 \times \frac{2}{3}$</p> <p>OR</p> <table border="1" data-bbox="277 521 501 1104"> <thead> <tr> <th>P</th> <th>J</th> <th>T</th> <th>D</th> </tr> </thead> <tbody> <tr><td>2</td><td>5</td><td>7</td><td>3</td></tr> <tr><td>4</td><td>10</td><td>14</td><td>6</td></tr> <tr><td>6</td><td>15</td><td>21</td><td>9</td></tr> <tr><td>8</td><td>20</td><td>28</td><td>12</td></tr> <tr><td>10</td><td>25</td><td>35</td><td>15</td></tr> <tr><td>12</td><td>30</td><td>42</td><td>18</td></tr> <tr><td>14</td><td>35</td><td>49</td><td>21</td></tr> <tr><td>16</td><td>40</td><td>56</td><td>24</td></tr> <tr><td>18</td><td>45</td><td>63</td><td>27</td></tr> <tr><td>20</td><td>50</td><td>70</td><td>30</td></tr> <tr><td>22</td><td>55</td><td>77</td><td>33</td></tr> <tr><td>24</td><td>60</td><td>84</td><td>36</td></tr> <tr><td>26</td><td>65</td><td>91</td><td>39</td></tr> <tr><td>28</td><td>70</td><td>98</td><td>42</td></tr> <tr><td>30</td><td>75</td><td>105</td><td>45</td></tr> </tbody> </table>	P	J	T	D	2	5	7	3	4	10	14	6	6	15	21	9	8	20	28	12	10	25	35	15	12	30	42	18	14	35	49	21	16	40	56	24	18	45	63	27	20	50	70	30	22	55	77	33	24	60	84	36	26	65	91	39	28	70	98	42	30	75	105	45	30	3	<p>M1 for $45 \div (5 - 2)$ M1 for '15'$\times 2$ A1 cao for 30</p> <p>OR M2 for $45 \times \frac{2}{3}$ oe (M1 for $45 \times \frac{1}{3}$) A1 cao for 30</p> <p>OR M1 for (2, 5); 4, 10; 6, 15; 8, 20 M1 for a completely correct list up to 30, 75 A1 cao (SC If M0 then B1 for 18 given as the answer)</p>
P	J	T	D																																																																	
2	5	7	3																																																																	
4	10	14	6																																																																	
6	15	21	9																																																																	
8	20	28	12																																																																	
10	25	35	15																																																																	
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26	65	91	39																																																																	
28	70	98	42																																																																	
30	75	105	45																																																																	

Q4.

Work out the difference in value between $\frac{1}{4}$ and 30%.

(Total for Question is 2 marks)

Q4.

	Working	Answer	Mark	Notes
		5%	2	<p>(uses percentages) M1 for $30 - 25 (= 5)$ or $25 - 30 (= -5)$ A1 for 5% oe</p> <p>OR</p> <p>(uses decimals) M1 for or $0.3 - 0.25$ or $0.25 - 0.3 (= -0.05)$ A1 for 0.05</p> <p>OR</p> <p>(uses fractions) M1 for $\frac{30}{100} - \frac{1}{4}$ Or $\frac{1}{4} - \frac{30}{100} (= -\frac{5}{100})$ A1 for $\frac{5}{100}$oe</p> <p>OR</p> <p>(uses trial value, eg 60) M1 for $0.3 \times 60 - 0.25 \times 60 (= 3)$ or $0.25 \times 60 - 0.3 \times 60 (= -3)$ A1 for $\frac{3}{60}$ oe</p>

Q5.

Here is a list of ingredients for making 18 mince pies.

Ingredients for 18 mince pies
225 g of butter
350 g of flour
100 g of sugar
280 g of mincemeat
1 egg

Elaine wants to make 45 mince pies.

Elaine has

- 1 kg of butter
- 1 kg of flour
- 500 g of sugar
- 600 g of mincemeat
- 6 eggs

Does Elaine have enough of each ingredient to make 45 mince pies?

You must show clearly how you got your answer.

(Total for Question is 4 marks)

Q5.

		Working	Answer	Mark	Notes
*			<p>Not enough mincemeat since $600 < 700$</p> <p>OR</p> <p>Only able to make 38 mince pies since insufficient mincemeat</p>	4	<p>M1 for $45 \div 18 (= 2.5)$ M1 for 2.5 used as factor or divisor A1 for 562.5 and 875 and 250 and 700 and 2.5 (accept 2 or 3) OR for availables as 400 and 400 and 200 and 240 and 2.4 (accept 2 or 3) C1 ft (dep on at least M1) for identifying and stating which ingredient is insufficient for the recipe (with some supportive evidence)</p> <p>OR</p> <p>M1 for a correct method to determine the number of pies one ingredient could produce M1 for a correct method to determine the number of pies all ingredient could produce A1 for 80 and 51 and 90 and 38 and 108 C1 ft (dep on at least M1) for identifying and stating which ingredient is insufficient for the recipe (with some supportive evidence)</p>

Q6.

Colin, Dave and Emma share some money.

Colin gets $\frac{3}{10}$ of the money.

Emma and Dave share the rest of the money in the ratio 3 : 2

What is Dave's share of the money?

(Total for Question is 4 marks)

Q6.

	Working	Answer	Mark	Notes
		28% or $14\frac{1}{50}$	4	<p>M1 for $100 - 30 (=70)$ or $1 - \frac{3}{10} (= \frac{7}{10})$ M1 for '$+70' \div (3 + 2) (=14)$ or '$\frac{7}{10}' \div (3 + 2) (= \frac{7}{50})$</p> <p>M1 for '$14' \times 2$ or $\frac{7}{50} \times 2$ A1 for 28% or $14\frac{1}{50}$ oe</p> <p>OR</p> <p>M1 for a correct method to find $(100-30)\%$ of any actual sum of money, eg 0.7×500 M1 for '$350' \div (3 + 2) (=70)$ M1 for '$70' \times 2 (=140)$ A1 for 28% or $14\frac{1}{50}$ oe</p> <p>OR</p> <p>M1 for starting with a two numbers in ratio 3:2, eg 21 and 14 M1 for equating sum of their numbers to $100 - 30 (=70)$, eg '$21' + '14' (=35)$ M1 for scaling sum of their numbers to 100%, eg '$35' \div 70 \times 100 (=50)$ A1 for 28% or $14\frac{1}{50}$ oe</p> <p>[SC award B3 for oe answers expressed in an incorrect form eg $2.8\frac{8}{10}$]</p>

Q7.

Jan writes down

one multiple of 9

two different factors of 40

Jan adds her three numbers together.

The answer is greater than 20 but less than 30

What three numbers could Jan have written down?

.....

(Total for Question is 3 marks)

Q7.

PAPER: 1MA0 2F				
Question	Working	Answer	Mark	Notes
		eg. 18, 4, 5	3	M1 for two different factors of 40 M1 for 3 numbers where the sum lies between 20 and 30 AND (where one is 9 or 18 or two are different factors of 40 A1

(Foundation)

Q8.

Work out the number that is halfway between 2.9 and 3.6

.....

(Total for Question is 1 mark)

Q8.

PAPER: IMA0 2F				
Question	Working	Answer	Mark	Notes
		3.25	1	B1 for 3.25 oe

Q9.

Here are two fractions.

$$\frac{2}{3} \quad \frac{7}{8}$$

Which of these fractions has a value closer to $\frac{3}{4}$?

You must show clearly how you get your answer.

(Total for Question is 3 marks)

Q9.

PAPER: IMA0_2F				
Question	Working	Answer	Mark	Notes
*		$\frac{2}{3}$	3	<p>M1 for attempting to write at least two fractions expressed with a common denominator with at least one of the two fractions correct A1 for three correct fractions with suitable common denominator C1 (dep M1) for correct conclusion from comparison of their three OR</p> <p>M1 for writing at least two of the fractions as decimals ie $\frac{2}{3}$ as 0.66(...) or 66(.6...)%, $\frac{7}{8}$ as 0.87(5) or 87.(5)%, $\frac{3}{4}$ as 0.75 or 75% A1 for three correct decimals or percentages C1 (dep M1) for correct conclusion from comparison of their three OR</p> <p>M1 for finding two fractions of the same number e.g. $\frac{2}{3}$ of 48 or $\frac{7}{8}$ of 48 (may be implied by shading a fraction of a rectangle divided into e.g. 48 parts) A1 for three correct values or three correct diagrams with shading C1 (dep M1) for correct conclusion from comparison of their three OR</p> <p>M1 for attempting to find the difference between $\frac{3}{4}$ and $\frac{2}{3}$ and between $\frac{3}{4}$ and $\frac{7}{8}$ at least one pair of fractions expressed with a suitable common denominator and at least one of the two fractions correct A1 for $\frac{1}{12}$ and $\frac{1}{8}$ or 0.08(333...) and 0.12(5) C1 (dep M1) for correct conclusion from comparison of the 2 differences.</p>

Q10.

Work out the value of $\sqrt{14.44 \times (7.3 - 2.45)^2}$

Write down all the figures on your calculator display.

.....
(Total for Question is 2 marks)

Q10.

PAPER: IMA0_2F				
Question	Working	Answer	Mark	Notes
		89.3855	2	M1 for 3.8 or 23.5225 or 18.43 or 36.86 or 89.3855 seen only rounded or truncated to at least 3 sig figs A1 cao

Q11.

There are 240 counters in a bag.
The counters are green or yellow or blue.

$\frac{3}{5}$ of the counters are green.

$\frac{1}{4}$ of the counters are yellow.

Work out the number of blue counters in the bag.

.....
(Total for Question is 3 marks)

Q11.

PAPER: IMA0_2F				
Question	Working	Answer	Mark	Notes
		36	4	<p>M1 for $\frac{3}{5} \times 240 (= 144)$</p> <p>M1 for $\frac{1}{4} \times 240 (= 60)$</p> <p>M1 (dep on M2) for $240 - ('144' + '60')$</p> <p>A1 cao</p> <p>OR</p> <p>M1 for $\frac{3}{5} + \frac{1}{4}$ or $\frac{17}{20}$ oe</p> <p>M1 for $1 - \frac{17}{20}$ ($= \frac{3}{20}$) or $\frac{17}{20} \times 240 (= 204)$</p> <p>M1 (dep on M2) for $\frac{3}{20} \times 240$ or $240 - '204'$</p> <p>A1 cao</p>

Q12.

(a) (i) Work out $3.2^2 + \sqrt{7.5}$

Write down all the figures from your calculator display.

.....
(ii) Write your answer to (a)(i) correct to 2 significant figures.

.....
(2)

(b) Work out the value of 10^5

.....
(1)

(Total for Question is 3 marks)

Q12.

	Working	Answer	Mark	Notes
(a)(i)		12.978(61279...)	2	B1 for 12.978(.....)
(ii)		13		B1 for 13 or ft from a(i) [Note: An answer of 13.0 gets B0]
(b)		100000	1	B1 cao

Q13.

Here are the ingredients needed to make 10 pancakes.

Pancakes	
Ingredients to make 10 pancakes	
300 ml	of milk
120 g	of flour
2	eggs

Matthew makes 30 pancakes.

(a) Work out how much flour he uses.

..... g
(2)

Tara makes some pancakes.
She uses 750 ml of milk.

(b) Work out how many pancakes she makes.

.....
(2)

(Total for Question is 4 marks)

Q13.

PAPER: IMA0_2F				
Question	Working	Answer	Mark	Notes
(a)		360	2	M1 $30 \div 10 (=3)$ or $120 \div 10 (=12)$ or $120 + 120 + 120$ oe A1 cao
(b)		25	2	M1 for $\frac{750}{300} (=2.5)$ oe A1 cao

Q14.

A film starts at 17 50

The film ends at 19 30

(a) How long does the film last?

.....
(2)

Jackie buys some tickets to see the film.

Each ticket costs £4.50

Jackie pays with two £20 notes.

Jackie gets £8.50 change.

(b) How many tickets did Jackie buy?

.....
(3)

(Total for Question is 5 marks)

Q14.

PAPER: 1MA0_2F				
Question	Working	Answer	Mark	Notes
*(a)		1 hour 40 minutes	2	M1 for correct working shown to find the difference between 17 50 and 19 30 e.g. using a carry of 60 minutes in a take away or counting on from 17 50 to 19 30 A1 for 1 hr 40 mins or 100 mins
(b)		7	3	M1 for $2 \times 20 - 8.5 (= 31.5)$ or $20 - 8.5 (= 11.5)$ M1 (dep) for “31.5” $\div 4.5$ or $(20 + “11.5”) \div 4.5$ or 7×4.5 oe (eg by addition/subtraction method) A1 cao