

Q1. You can use this rule to work out the number of minutes it takes to cook a chicken.

Multiply the chicken's weight, in kg, by 45. Then add 30.

A chicken's weight is 2 kg.

Use the rule to work out the number of minutes it will take to cook this chicken.

..... minutes

(Total 2 marks)

Q2. Erica and Luke use this rule to work out their pay.

Pay = number of hours worked × rate of pay per hour

Erica worked for 32 hours.
Her rate of pay per hour was £5.20

(a) What was Erica's pay?

£

(2)

Luke's pay was £172.50

His rate of pay per hour was £5.75

(b) How many hours did Luke work?

..... hours

(2)
(Total 4 marks)

Q3. You can use this rule to work out the total charge for hiring a cement mixer.

Total charge = £30 plus £7 for each hour of hire
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On Monday, Sally hired a cement mixer for 4 hours.

(a) Work out Sally's total charge.

£

(2)

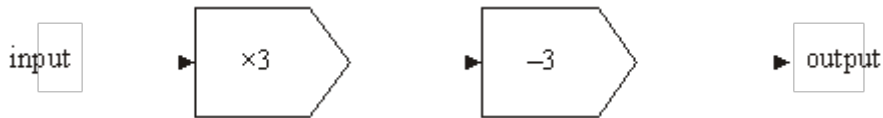
On Tuesday, Tom hired a cement mixer.
Tom's total charge was £51

(b) Work out for how many hours Tom hired the cement mixer.

..... hours

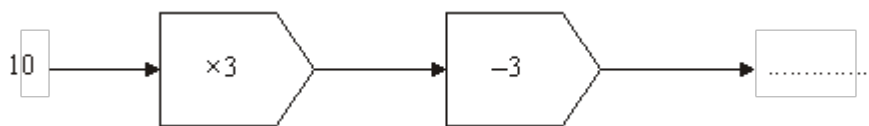
(3)
(Total 5 marks)

Q4. The diagram shows a mathematical rule.



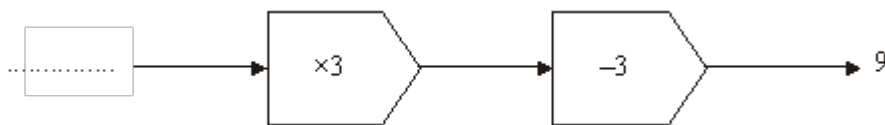
It multiplies a number by 3 and then subtracts 3

(a) Complete the diagram.



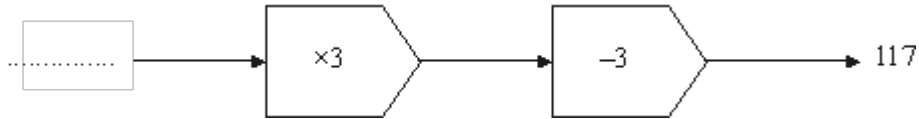
(1)

(b) Complete the diagram.



(1)

(c) Complete the diagram.



(1)
(Total 3 marks)

Q5. You can use this rule to work out the cost, in pounds, of hiring a carpet cleaner.

Multiply the number of days hire by 6
Add 4 to your answer

Jill hires the carpet cleaner for 3 days.

(a) Work out the cost.

£

(2)

Carlos hires the carpet cleaner.
The cost is £52.

(b) Work out for how many days Carlos hires the carpet cleaner.

..... days

(3)
(Total 5 marks)

Q6. This formula is used to predict the adult height of a baby girl.

$$H = \frac{F + M - 12.5}{2}$$

H = adult height of girl (cm)

F = height of father (cm)

M = height of mother (cm)

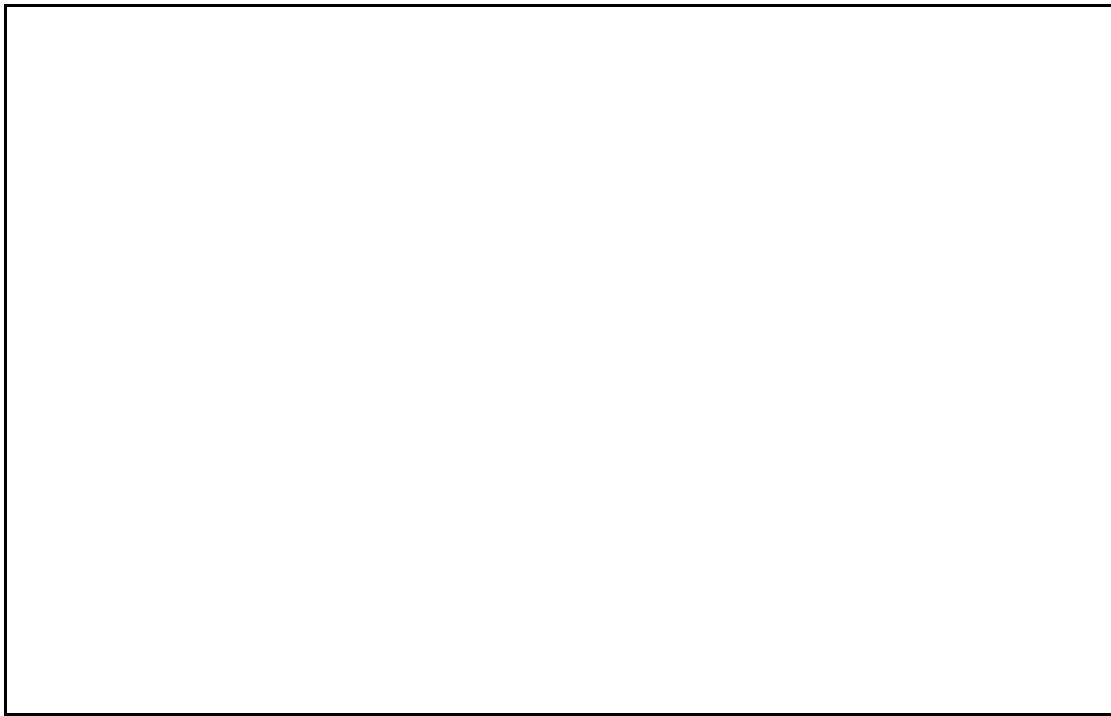
Karen and Keith have a baby girl.

They are interested in finding out how tall their baby girl is likely to grow.

Karen has a height of 156 cm.

Keith has a height of 172 cm.

- (a) Use the formula to predict the adult height of their baby girl.
Show clearly how you get your answer.



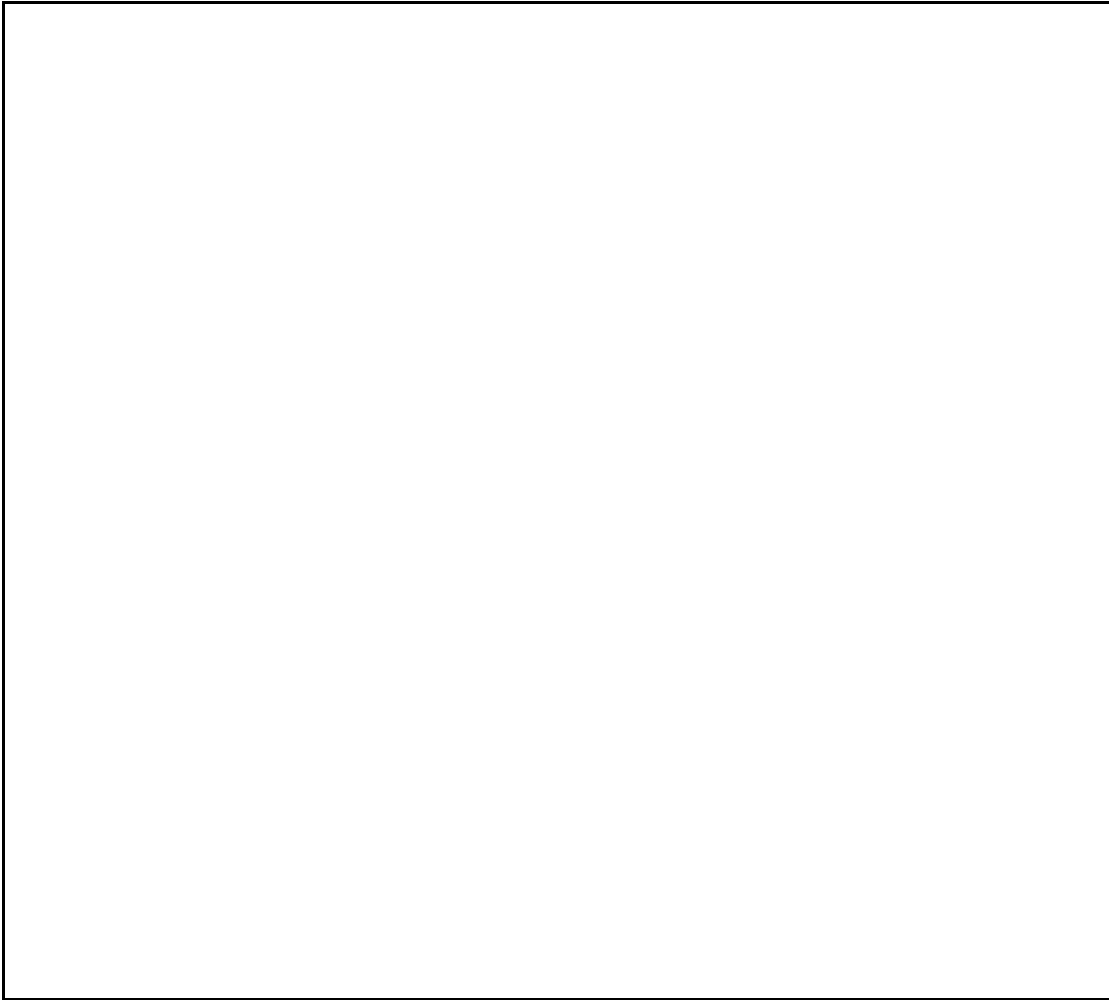
Height cm

(2)

John and Jenny also have a baby girl.
John and Jenny are the same height.

When they use the formula to predict the adult height of their baby girl they get an answer of 162 cm.

- (b) Find an estimate of Jenny's height.
Give your answer to the nearest centimetre.



Height cm

(3)
(Total 5 marks)

M1.

Working	Answer	Mark	Additional Guidance
$2 \times 45 + 30$	120 minutes	2	M1 for $2 \times 45 + 30$ A1 for 120 minutes or 2 hours
Total for Question: 2 marks			

M2.

	Working	Answer	Mark	Additional Guidance
(a)	$32 \times \text{£}5.20$	£166.40	2	M1 for $32 \times \text{£}5.20$ A1 cao
(b)	$\text{£}172.50 \div \text{£}5.75$	30 hours	2	M1 for $172.50 \div 5.75$ A1 cao
Total for Question: 4 marks				

M3.

	Working	Answer	Mark	Additional Guidance
(a)	$30 + (7 \times 4)$	£58	2	M1 $30 + 7 \times 4$ or $30 + 28$

				A1 cao
(b)	$51 - 30 = 21$ $21 \div 7 = 3$	3	3	M1 51-30 or sight of 21 M1 (dep) "21" $\div 7$ A1 cao NB: a correct answer which is embedded gets B2
Total for Question: 5 marks				

M4.

	Answer	Mark	Additional Guidance
(a)	27	1	B1 cao
(b)	4	1	B1 cao
(c)	40	1	B1 cao
Total for Question: 3 marks			

M5.

	Working	Answer	Mark	Additional Guidance
(a)	$6 \times 3 + 4$	22	2	M1 for 6×3 or for ' 6×3 ' + 4 or 18 seen A1 for 22, accept 22.00 or 22.0
(b)	$52 - 4 = 48$ $48 \div 6 =$	8	3	M1 for $52 - 4$ or 48 seen M1 (dep) for ' $52 - 4$ ' $\div 6$ or $48 \div 6$ A1 for 8 cao Alternative method:

				M2 for a systematic attempt using $6 \times d + 4$ at least twice with at least one d greater than 5 with correct answers A1 for 8 cao
				Total for Question: 5 marks

M6.

	Working	Answer	Mark	Additional Guidance
(a)	$\frac{156 + 174 - 12.5}{2}$	157.75	2	M1 substitute correctly A1 157.75 or 158

$$(b) \frac{j + j - 12.5}{2} = 162$$

168

3

$$2j \times 12.5 = 324$$

$$\frac{324 + 12.5}{2}$$

Total for Question: 5 marks

E1. This was a well answered question.

E3. This was a well answered question, with many candidates gaining full marks in both parts. The most common error in both parts was to perform the calculation in the wrong order. In part (b) a further error was to fail to account for the need to remove the fixed charge of £30 before dividing. Candidates who gave the answer embedded within an expression, but failed to extract the answer and put it on the answer line, were given some credit. It was clear in this question where a candidate did not have a calculator, usually evidence by computational errors.

E4. Again, the success rate on this question was extremely high although a few were unfamiliar with this type of question, giving inappropriate responses such as 'output' in (a) and 'input' in parts (b) and (c).

E5. Foundation

Those candidates who showed their method in part (a) usually wrote $6 \times 3 + 4$; too many incorrectly calculated 6×3 . In part (b) the most common error was to divide 52 by 6 and then subtract 4, but many failed to show any working.

Higher

The first part of this question just needed a straightforward arithmetical approach and

there was evidence that many were working on the correct lines with $\frac{3}{4}$ of the candidates scoring all 5 available marks for this question. Seeing (6×3) and then $+ 4$ produced the total cost. Part (b), involving calculating the number of days, was less obvious, but again there were some well set out solutions leading to the correct answer. Realising that $52 - 4$ was the first step in the calculation was essential to arriving at the final correct value.