

Examination practice questions

You should have:

A ruler, protractor, compasses, a pen, pencil, eraser, calculator.
For some questions, you may need tracing paper.

Instructions

- Use **black** ink or ball-point pen.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The marks for each question are shown in brackets.
- If the number of marks for two similar questions isn't the same, this is likely due to them being modelled on different specifications. In this case, it is worth considering both mark schemes.
- Use the number of marks for each question as a guide as to how much time to spend on each question. As a rough guide, you can multiply the number of marks by 1.2 to see how many minutes you should spend on a question.
- Questions will generally get more challenging as the document progresses. Some of the latter questions will go beyond the core grade level for this topic.

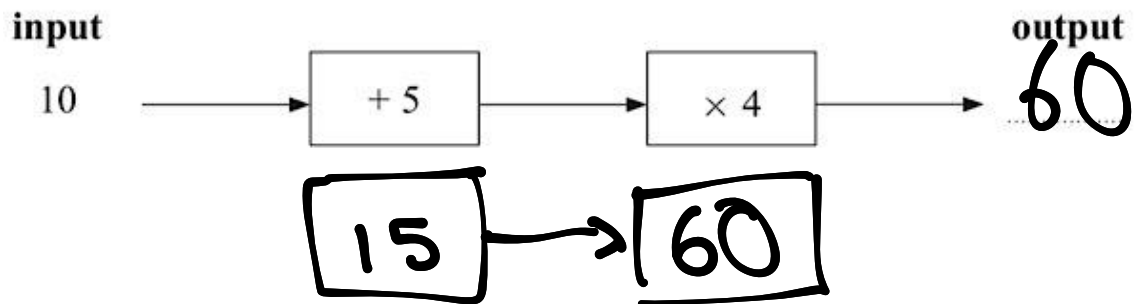
Advice

- Read each question carefully before you start to answer it.
- Don't forget to have fun.
- Check your answers at the end.

Q1.

AtoZrevision.com

Complete the number machine by writing the correct output below.



(1 mark)

Q2.

AtoZrevision.com

Here is a number machine.



Work out the output when the input is 6



43

(1 mark)

Q3.

AtoZrevision.com

Here is a number machine.



What is the **output** when the input is 4?



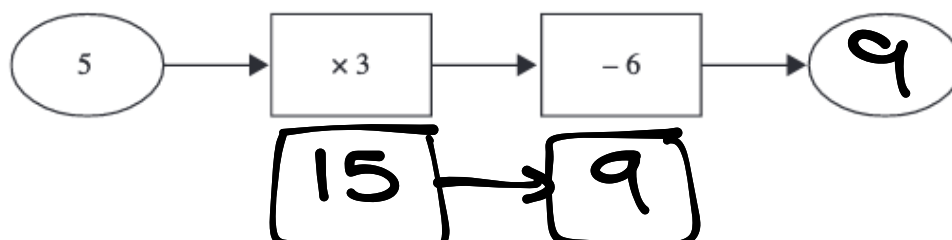
5

(1 mark)

Q4.

AtoZrevision.com

Find the missing number.



(1 mark)

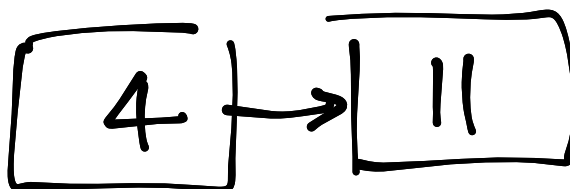
Q5.

AtoZrevision.com

Here is a two-stage number machine.



Work out the output when the input is 20.



11
.....

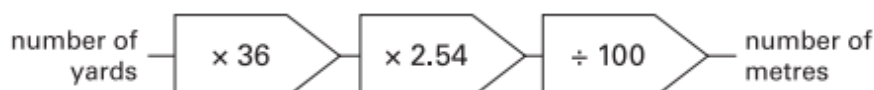
(1 mark)

Q6.

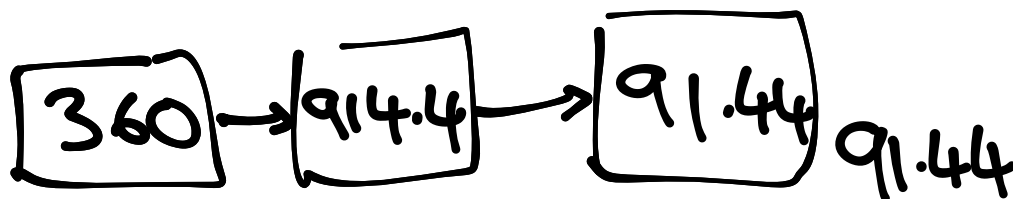
AtoZrevision.com

Some people use **yards** to measure length.

The diagram shows one way to change yards to metres.



Change **100 yards** to metres.



(1 mark)

Q7.

AtoZrevision.com

The cost of hiring a car can be worked out using this rule.

Cost = £90 + 50p per mile

Bill hires a car and drives 80 miles.

Work out the cost of his car hire.

$$\begin{aligned}
 C &= \text{£}90 + (0.5 \times 80) \\
 &= 90 + 40 \\
 &= \text{£}130
 \end{aligned}$$

(1 mark)

Q8.

AtoZrevision.com

This rule is used to work out the cost of hiring a village hall.

Total cost = £8 for each hour plus a fixed charge of £5

Jackie hires the hall for 7 hours.

Work out the total cost.

$$\begin{aligned} TC &= (8 \times 7) + 5 \\ &= 56 + 5 \\ &= 61 \end{aligned} \quad \begin{array}{r} \text{£} 61 \\ \hline \end{array} \quad (1 \text{ mark})$$

Q9.

AtoZrevision.com

Shams uses this rule to work out the total charge for photocopying.

Total charge = number of photocopies × copy rate

Shams needs 15 photocopies in colour.

The copy rate for photocopies in colour is 6 pence.

Use the rule to work out the total charge.

$$\begin{aligned} TC &= 15 \times 6 \\ &= 90p \end{aligned} \quad \begin{array}{r} 90p \\ \hline \end{array} \quad (1 \text{ mark})$$

Q10.

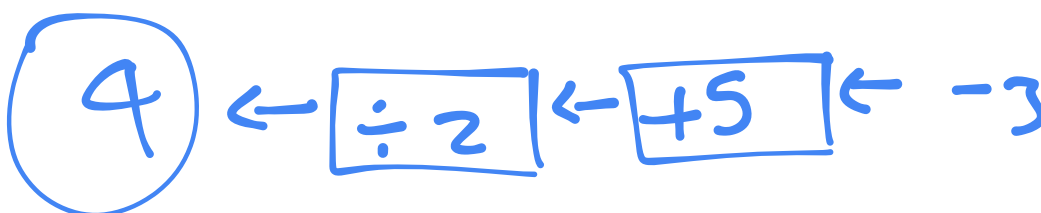
AtoZrevision.com

Here is a number machine



The output is -3.

What is the input?

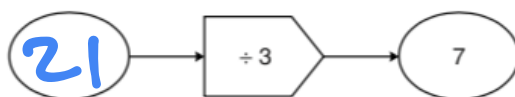


(1 mark)

Q11.

AtoZrevision.com

Complete the following function machine.



(1 mark)

Q12.

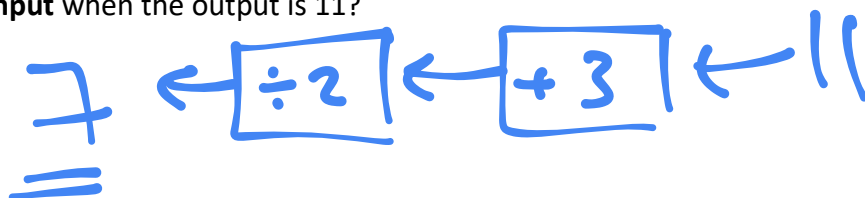
AtoZrevision.com

Here is a number machine.



M1 For A correct STEP

What is the **input** when the output is 11?



A1 7
(2 marks)

Q13.

AtoZrevision.com

Here is a function.



M1 ONE correct STEP

Find the input when the output is 63.

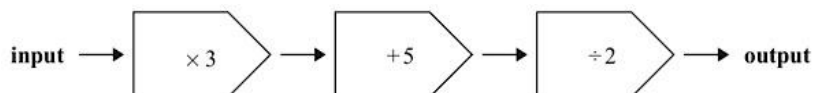


A1 6
(2 marks)

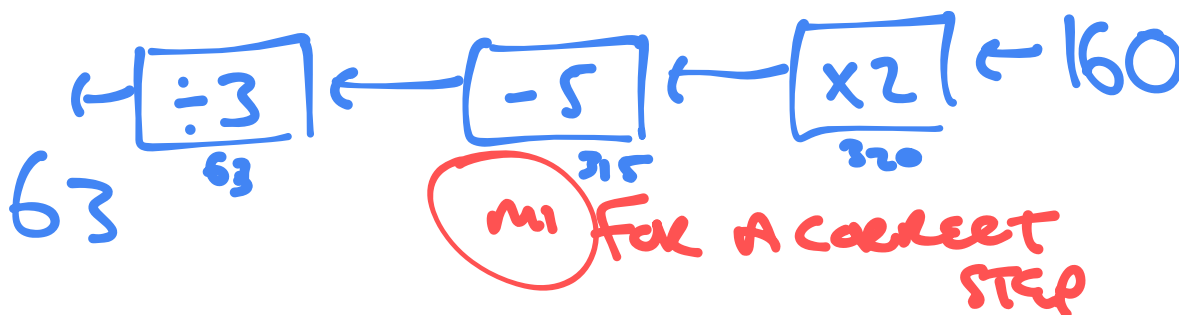
Q14.

AtoZrevision.com

Here is a number machine.



Work out the input when the output is 160.



A1

63
(2 marks)

M1 For A correct STEP

Q15.

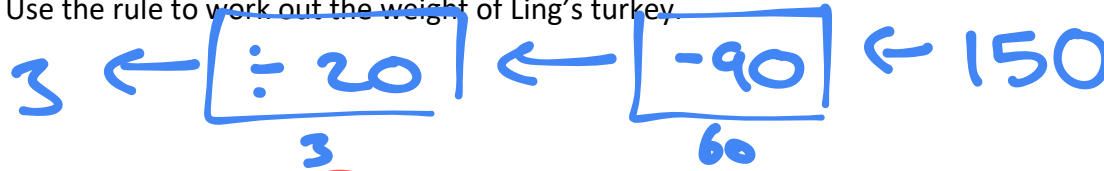
AtoZrevision.com

Here is a rule to work out the time, in minutes, needed to cook a turkey.



Ling's turkey takes 150 minutes to cook.

Use the rule to work out the weight of Ling's turkey.



M1 For A CORRECT STEP

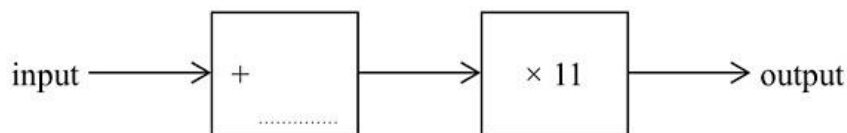
A1
3kg
(2 marks)

Q16.

AtoZrevision.com

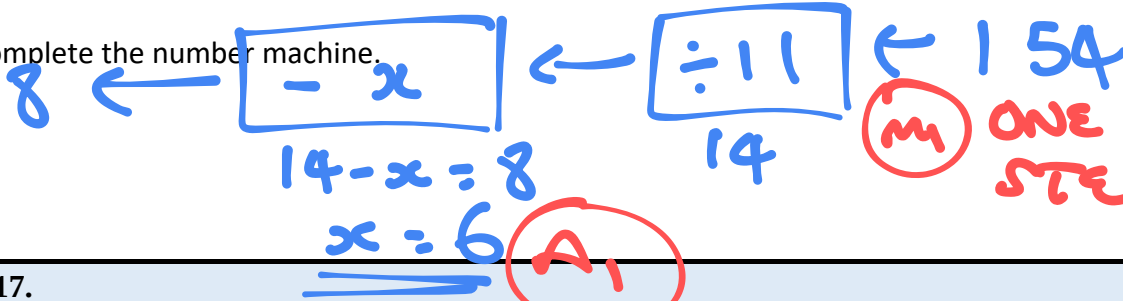
Here is a number machine.

The number machine is not complete.



When the input is 8, the output is 154

Complete the number machine.

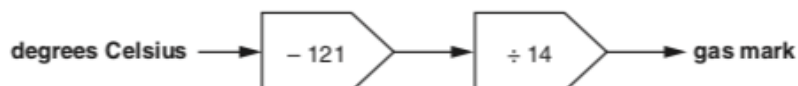


M1 ONE CORRECT STEP
(2 marks)

Q17.

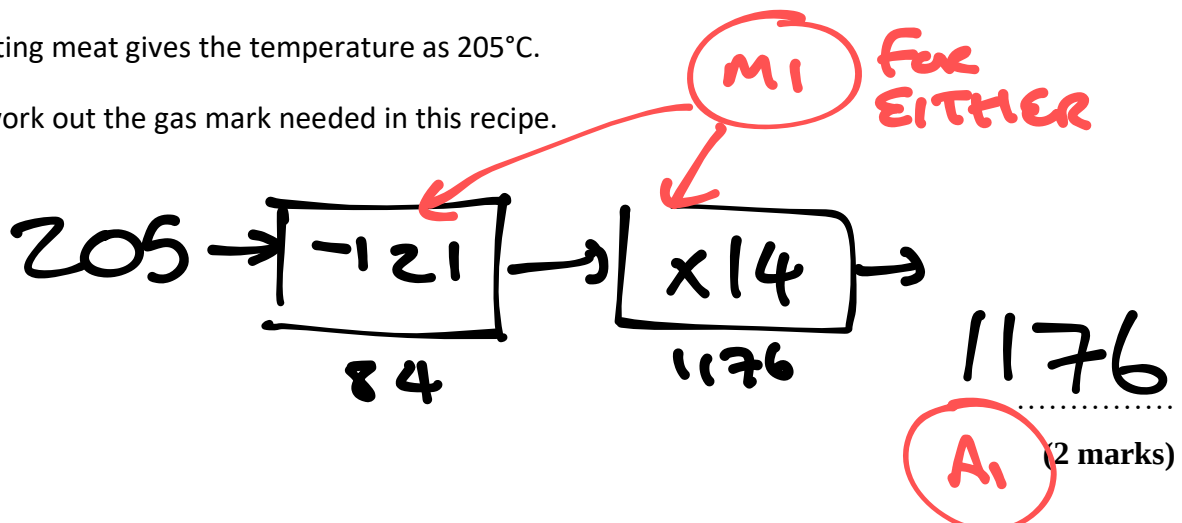
AtoZrevision.com

Tony uses this rule to convert temperatures in degrees Celsius to a gas mark for his oven.



A recipe for roasting meat gives the temperature as 205°C.

Use the rule to work out the gas mark needed in this recipe.



M1 For EITHER

A1
(2 marks)

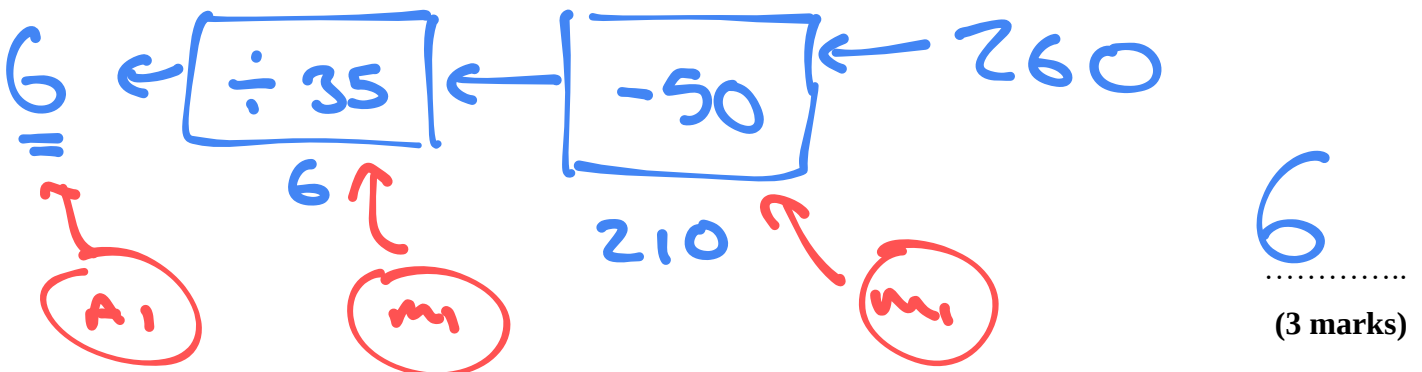
Tom the plumber charges £35 for each hour he works at a job, plus £50 The amount Tom charges, in pounds, can be worked out using this rule.

Multiply the number of hours
he works by 35

Add 50 to your answer

At one job Tom charged the customer £260

How many hours did Tom work?



Here is a rule to work out the time, in minutes, needed to cook a turkey.

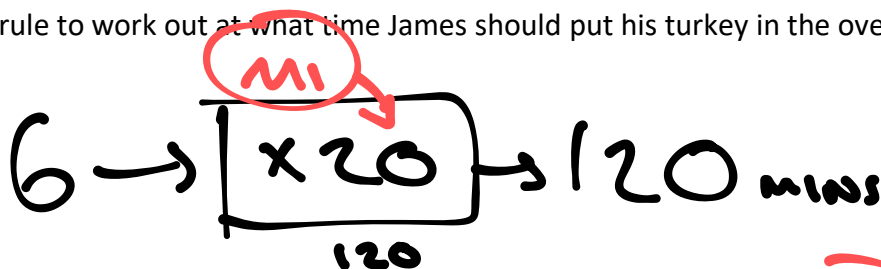


James cooks a different turkey.

His turkey weighs 6kg.

James wants to take his turkey out of the oven at 1:15pm.

Use the rule to work out at what time James should put his turkey in the oven.



$$120 + 90 = 210 \text{ mins}$$

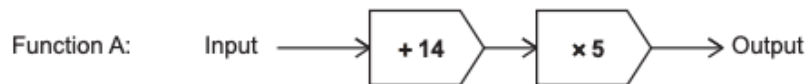
$$1:15 \text{ pm} - 210 \text{ mins (3H 30m)}$$

$$= 1:15 \text{ pm} - 3 \text{ Hours} = 10:15 \text{ am}$$

$$10:15 \text{ am} - 30 \text{ mins} = 9:45 \text{ am}$$

(5 marks)

Here is a function.



A number, k , is put into function A.

The output is also k .

Find the value of k .

$$(k + 14) \times 5 = k \quad m_1$$

$$k + 14 = \frac{k}{5}$$

.....
(3 marks)

$$m_1 \quad 14 = \frac{k}{5} - k$$

$$14 = -0.8k$$

$$\frac{14}{-0.8} = k \quad \therefore k = -17.5$$

PHEW!

A,