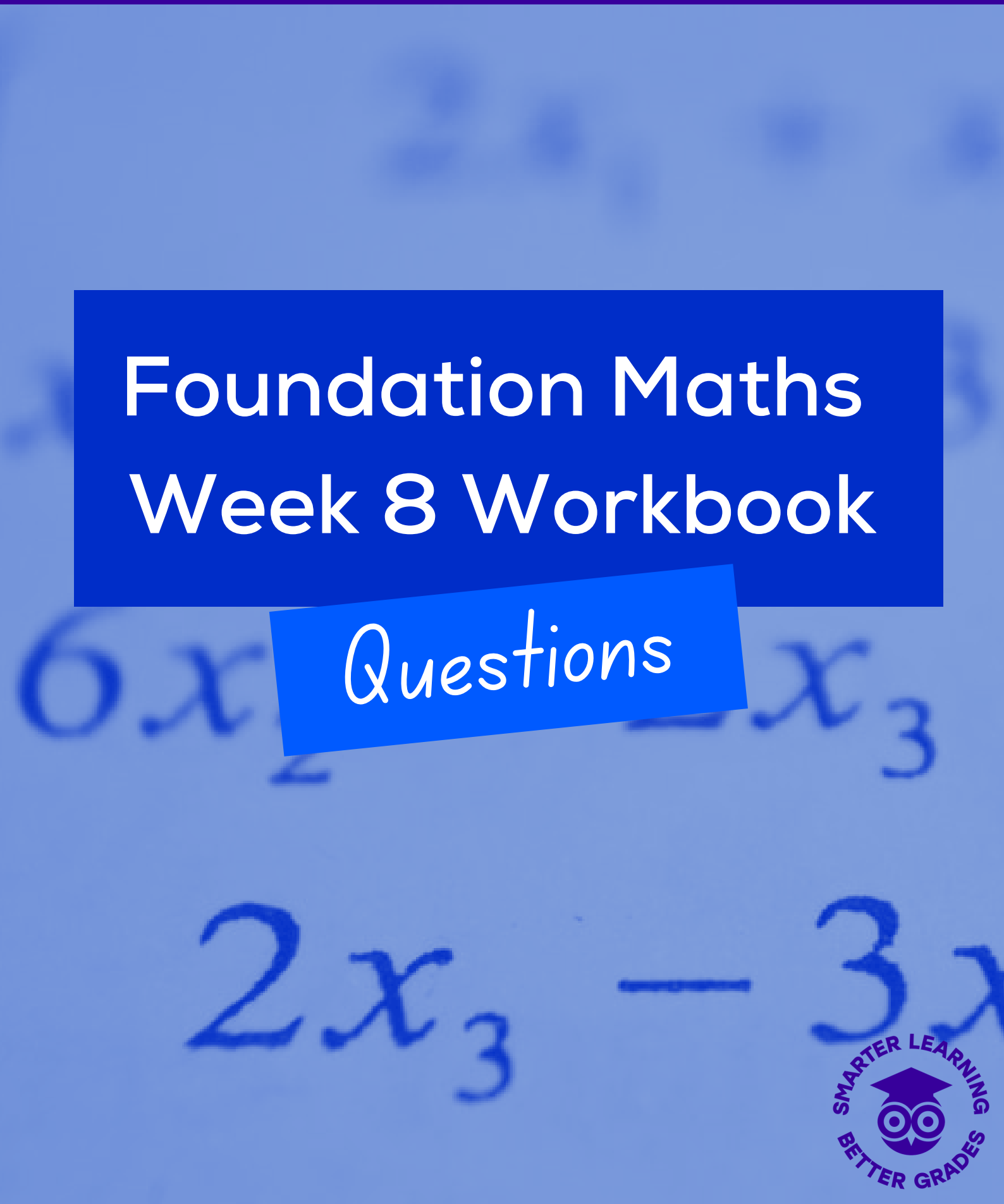
GCSE Boot Camp

Foundation Maths Week 8 Workbook

Questions



GCSE Boot Camp

Topics

Congratulations, you've made it to the final week of your 8 Week GCSE Boot Camp!

You've worked hard over 7 weeks on a range of different topics in your weekly Maths workbooks. Is there a topic you now feel more confident about that you were unsure of before? Write it down here to remind yourself of how far you've come!

.....

This week you have questions in your workbook on a range of topics that we've covered together throughout your boot camp. Plus this workbook also features some extra topics like triangle construction to challenge your knowledge.

Why not try sitting this workbook like a mini exam paper and track your progress. Set a timer, sit in a quiet room with no distractions or answers close by and make sure you only use a calculator on questions that are on the calculator paper.

Next week we'll send you the answers to this week's workbook and 2 expert video tutorials so you can mark your mini exam paper. Don't forget that for full access to all of the corresponding videos in this workbook sign up for a SchoolOnline subscription from £8.99 a month.

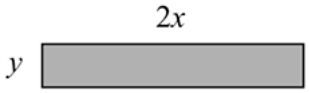
This week's workbook include questions on:

- Algebra
- Probability and Statisitics
- Number
- Ratio, Proportion and Rates of Change
- Angles and Geometry

SMARTER LEARNING BETTER GRADES

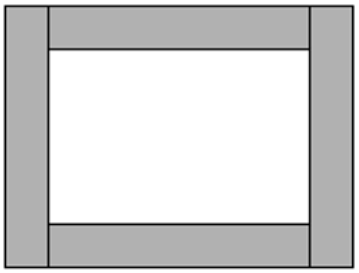
Sample A Foundation Calc Paper 3

17 Here is a rectangle made of card.



The measurements in the diagram are in centimetres.

Lily fits four of these rectangles together to make a frame.



The perimeter of the inside of the frame is P cm.

(a) Show that $P = 8x - 4y$

(2)

Magda says,

"When x and y are whole numbers, P is always a multiple of 4."

(b) Is Magda correct?
You must give a reason for your answer.

.....

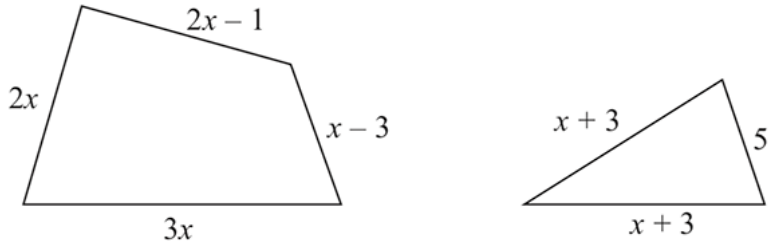
.....

(2)

(Total for Question 17 is 4 marks)

Sample B Foundation Calc Paper 3

30



In the diagram all measurements are in centimetres.

The perimeter of the quadrilateral is twice the perimeter of the triangle.

Work out the perimeter of the quadrilateral.

..... cm

(Total for Question 30 is 4 marks)

Sample A Foundation Non-Calc Paper 1

27 There are 1200 students at a school.

Kate is helping to organise a party.
She is going to order pizza.

Kate takes a sample of 60 of the students at the school.
She asks each student to tell her **one** type of pizza they want.

The table shows information about her results.

Pizza	Number of students
ham	20
salami	15
vegetarian	8
margarita	17

Work out how much ham pizza Kate should order.
Write down any assumption you make **and** explain how this could affect your answer.

.....

.....

(Total for Question 27 is 3 marks)

Utility Bills

22 Henry is thinking of having a water meter.

These are the two ways he can pay for the water he uses.

Water Meter

A charge of £28.20 per year

plus

91.22p for every cubic metre of water used

1 cubic metre = 1000 litres

No Water Meter

A charge of £107 per year

Henry uses an average of 180 litres of water each day.

Use this information to determine whether or not Henry should have a water meter.

(Total for Question 22 is 5 marks)

16 Sam buys 20 boxes of oranges.
There are 25 oranges in each box.

Each boxes of oranges costs £7

Sam sells $\frac{2}{5}$ of the oranges he bought.

He sells each of these oranges for 40p.

He then sells each of the remaining oranges at 3 oranges for 50p.

Did Sam make a profit or did Sam make a loss?
You must show working to justify your answer.

Fractions and Percentages

Sample B Foundation Calc Paper 3

17 Amelia, Hayden and Sophie did a test.
The total for the test was 75 marks.

Amelia got 56% of the 75 marks.

Hayden got $\frac{8}{15}$ of the 75 marks.

Sophie got 43 out of 75

Who got the highest mark?
You must show all your working.

(Total for Question 17 is 3 marks)

Ratio/Percentages

Sample A Foundation Non-Calc Paper 1

25 In a company, the ratio of the number of men to the number of women is 3 : 2

40% of the men are under the age of 25
10% of the women are under the age of 25

What percentage of all the people in the company are under the age of 25?

.....%

(Total for Question 25 is 4 marks)

Currency Calculations

19 Asif is going on holiday to Turkey.

The exchange rate is £1 = 3.5601 lira.

Asif changes £550 to lira.

(a) Work out how many lira he should get.
Give your answer to the nearest lira.

..... lira

(2)

Asif sees a pair of shoes in Turkey.
The shoes cost 210 lira.

Asif does not have a calculator.
He uses £2 = 7 lira to work out the approximate cost of the shoes in pounds.

(b) Use £2 = 7 lira to show that the approximate cost of the shoes is £60

(2)

(c) Is using £2 = 7 lira instead of using £1 = 3.5601 lira a sensible start to Asif's method to work out the cost of the shoes in pounds?

You must give a reason for your answer.

.....

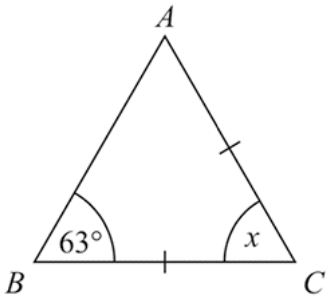
.....

(1)

(Total for Question 19 is 5 marks)

June 2018 Foundation Calc Paper 2

15 Mary needs to work out the size of angle x in this diagram.



She writes

$x = 63°$ because base angles of an isosceles triangle are equal.

Mary is wrong.

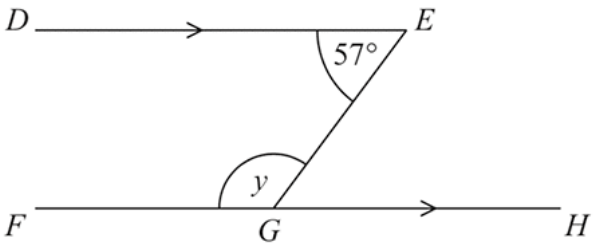
(a) Explain why.

.....

.....

(1)

William needs to work out the size of angle y in this diagram.



William writes

Working	**Reason**
angle $EGH = 57°$	because corresponding angles are equal
$y = 180° - 57°$ $y = 123°$	because angles on a straight line add up to 180°

One of William's reasons is wrong.

(b) Write down the correct reason.

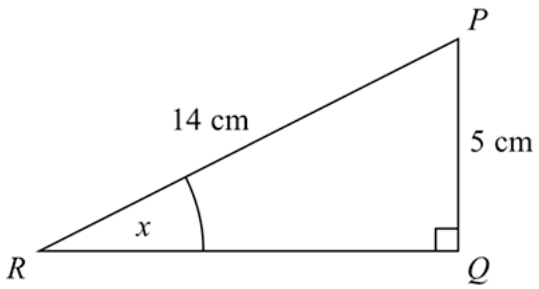
.....

.....

(1)

Sample A Foundation Calc Paper 2

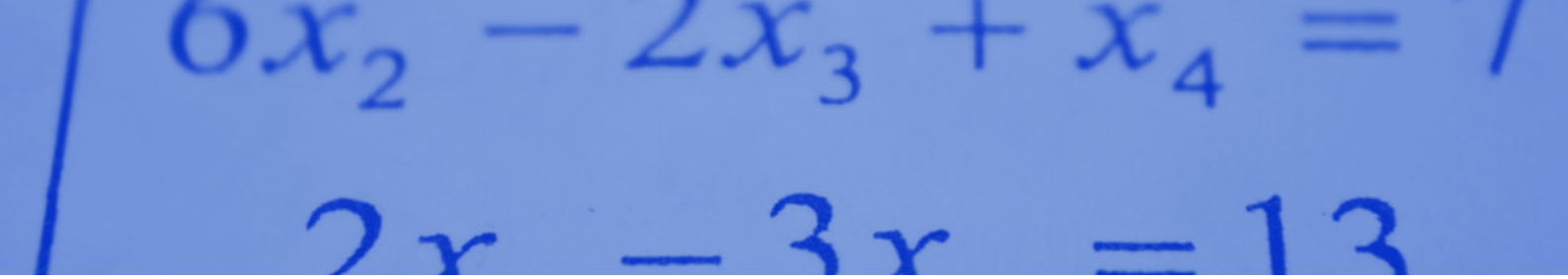
24 PQR is a right-angled triangle.



Work out the size of the angle marked x.
Give your answer correct to 1 decimal place.

.....°

(Total for Question 24 is 2 marks)



NOTES