1 Ellen buys items from car boot sales.
She then sells these items on an internet auction site.

The table shows some information about the items Ellen bought and sold one week.
The first row has been completed.

Item	Bought	Sold	Profit or loss
DVD	£5	£7.50	£2.50 profit
Doll	£8	£12	.....
Jigsaw	£2	.....	£1.50 profit
Chair	.....	£20	£5 loss
Train set	£37	£35	.....

(a) Complete the table.

(2)

(b) Work out Ellen's total profit or loss for these five items.

Same as Q1 on Draft SAMs

(2)

(Total for Question 1 is 4 marks)

2 (a) Find the value of $\sqrt{1.6 + 0.96}$

(1)

(b) Find the value of 1.2^4

(1)

(c) Write 37.483 correct to 1 significant figure.

(1)

uestion 2 is 3 marks)

6 (a) Work out the difference between 5.02×1.8 and 2.36×1.8

(2)

(b) Work out 1.2^4

(1)

(c) Aqsa worked out this calculation:

$15.6 - 1.5 \times 13.8$

Her answer was 194.58

This answer is wrong.

(i) Explain what mistake Aqsa may have made.

(ii) Work out the correct answer to $15.6 - 1.5 \times 13.8$

(2)

(d) Write 9.35×10^7 as an ordinary number.

(1)

(Total for Question 6 is 6 marks)

"some" parts of Q6 from the Draft SAMs have been used

3 (a) Simplify $c + c + c + c$

(1)

(b) Simplify $6 \times m \times 5$

(1)

(c) Simplify $2e + 3f + 7e - 5f$

(2)

(d) Expand and simplify $(x + 3)(x + 5)$

(2)

(Total for Question 3 is 6 marks)

NEW

4 (a) Write the ratio 48 : 120 in its simplest form.

(2)

Sally has three tiles.
Each tile has a different number on it.
Sally puts the three tiles down to make a number.
Each number is made with all three tiles.

(b) How many different numbers can Sally make?

(2)

There are 60 animals at a rescue centre.

30% of the animals are cats.
38 of the animals are dogs.

The rest of the animals are horses.

NEW

(c) Work out how many horses there are at the rescue centre.

(3)

(Total for Question 4 is 7 marks)

5 Ade sells shirts in 4 sizes.
The sizes are small (S), medium (M), large (L) and extra large (XL).

Here are the sizes of the shirts that Ade sold in each of two weeks.

Week 1	S	L	M	L	XL	M	L	S	L	L
	M	XL	S	L	M	M	L	L	M	M
Week 2	M	M	L	L	L	XL	S	S		
	L	XL	S	M	M	L	M	M		

(a) (i) Draw a suitable diagram that Ade could use to compare the sizes of shirts sold in week 1 with the sizes of shirts sold in week 2

(ii) Explain how the diagram you have chosen allows the sizes of the shirts sold in week 1 to be compared with the sizes of the shirts sold in week 2.

(4)

Ade buys 240 more shirts to sell.

(b) (i) Work out an estimate of the number of size large (L) shirts Ade should buy.

(ii) Explain whether your answer to part (b)(i) gives a reliable estimate of the number of size large (L) shirts Ade should buy.

(3)

(Total for Question 5 is 7 marks)

(ii) Give a reason for your choice of diagram.

(4)

Ade buys 240 more shirts to sell.

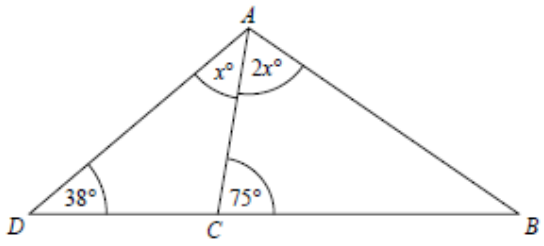
(b) Work out an estimate of the number of size large (L) shirts Ade should buy.

(2)

(Total for Question 2 is 6 marks)

Based on Q2 from Draft SAM's NOTE the difference in marks

6



ABD is a triangle.
C is a point on *BD*.

Show that angle *ABD* is 31°.
Give a reason for each stage in your working.

Same as Q4 from Draft SAM's

(Total for Question 6 is 4 marks)

7 Noah buys coffee sachets to use in his coffee maker.

There are 16 coffee sachets in a pack.

A pack costs £3.99

Noah uses 5 coffee sachets each day.

Work out the minimum amount that Noah spends on coffee sachets in one year.

Same as Q5 from Draft SAM's

(Total for Question 7 is 4 marks)

8 Delia uses this rule to cook some beef.

Cooking time in minutes = 20 × weight in pounds + 30

The weight of the beef is 1.5 kg.
1 kg = 2.2 pounds.

(a) How long will the beef take to cook?

(4)

Kevin has a different piece of beef.
The weight of his beef is 3 kg.

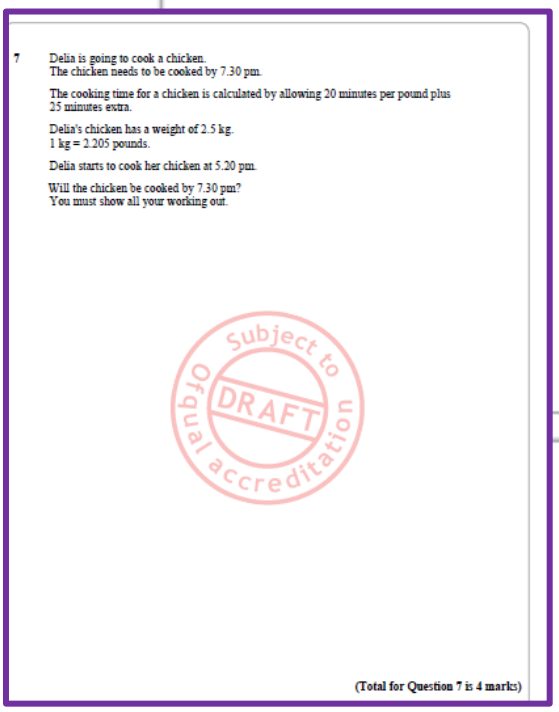
Kevin says

'Because the weight of my piece of beef is twice the weight of Delia's piece of beef it will take twice as long to cook as Delia's piece took.'

(b) Is Kevin correct?
Explain your answer.

(1)

(Total for Question 8 is 5 marks)



7 Delia is going to cook a chicken.
The chicken needs to be cooked by 7.30 pm.

The cooking time for a chicken is calculated by allowing 20 minutes per pound plus 25 minutes extra.

Delia's chicken has a weight of 2.5 kg.
1 kg = 2.205 pounds.

Delia starts to cook her chicken at 5.20 pm.

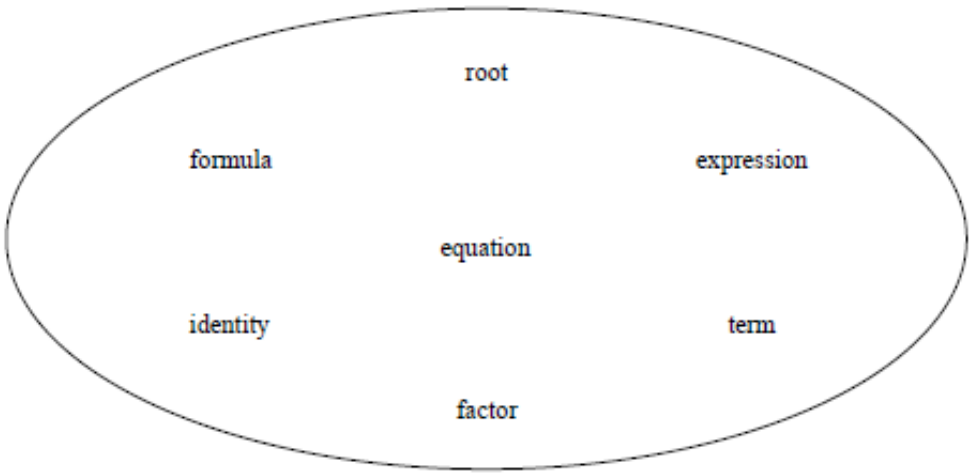
Will the chicken be cooked by 7.30 pm?
You must show all your working out.

(Total for Question 7 is 4 marks)

Based on Q7 from Draft SAM's

NOTE the difference in marks

9



Choose a word from those above that makes this statement correct.

(a) x^2 is a ..... in $x^2 + 4y$

(1)

Choose a word from those above that makes this statement correct.

(b) $(y + 2)$ is a ..... of $3y + 6$

(1)

(Total for Question 9 is 2 marks)

Same as Q9 in Draft SAMs

10 Brian, Suha and Kamil pick apples.

Suha picks twice as many apples as Brian.
Kamil picks nine more apples than Suha.

They pick a total of 94 apples.

How many apples does Brian pick?

NEW

(Total for Question 10 is 4 marks)

11 Imran carried out a survey on the wearing of cycle helmets by the men and the women living in his village.

He used the information he collected to draw two pie charts.

Mary looks at the two pie charts.

She says:

"The pie charts show that more women wear helmets than men."

(a) Is Mary right?
You must explain your answer.

(1)

Imran chose to draw pie charts to display the results of his survey.

(b) Are pie charts the best way to show this information?
You must explain your answer.

(1)

(Total for Question 11 is 2 marks)

Same as Q12 in Draft SAMs

12 Ashten chooses three different whole numbers between 1 and 50

The first number is a prime number.
The second number is 4 times the first number.
The third number is 6 less than the second number.

The sum of the three numbers is greater than 57

Find the three numbers.

Same as Q13 in Draft SAMs

(Total for Question 12 is 3 marks)

13 Given that $3(x - c) = 2x + 5$ where c is an integer,

show that x cannot be a multiple of six.

Same as Q14 in Draft SAMs

(Total for Question 13 is 3 marks)

14 Jane made some almond biscuits which she sold at a fête.

She had:

5 kg of flour
3 kg of butter
2.5 kg of icing sugar
320 g of almonds

Here is the list of ingredients for making 24 almond biscuits.

Ingredients for 24 almond biscuits
150 g flour
100 g butter
75 g icing sugar
10 g almonds

Jane made as many almond biscuits as she could, using the ingredients she had.

(a) Work out how many almond biscuits she made.

(3)

Jane sold 70% of the biscuits she made for 25p each.
She sold the other 30% at 4 for 55p.

The ingredients Jane used cost her £45 and the total of all other costs was £27

(b) Work out the percentage profit.

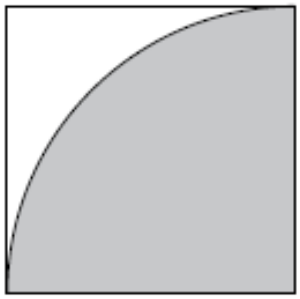
Same as Q15 in Draft SAMs

(6)

(Total for Question 14 is 9 marks)

15 The diagrams show two identical squares.

A



B

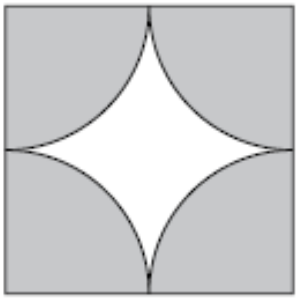


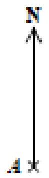
Diagram **A** shows a quarter of a circle shaded inside the square.
Diagram **B** shows four identical quarter circles shaded inside the square.

Show that the area of the region shaded in diagram **A** is equal to the area of the region shaded in diagram **B**.

Same as Q16 in Draft SAMs

(Total for Question 15 is 3 marks)

16 Here is part of a map showing the position of a port *A*.



B is a lighthouse 36 km from *A* on a bearing of 050°

(a) (i) Construct a diagram to show the position of *B*.
Use a scale of 1 cm represents 4 km.

(ii) Write down the bearing of *A* from *B*.

(3)

From the lighthouse at *B*, ships can be seen when they are within a range of 23 km of *B*.
A ship sails due East from *A*.

(b) Show, **by calculation**, that on this course this ship will not be seen from the lighthouse at *B*.

You must not use a scale drawing.

(4)

(Total for Question 16 is 7 marks)

17 Here is part of a map showing the position of a port *A*.

B is a lighthouse 36 km from *A* on a bearing of 050°

(a) (i) Construct a diagram to show the position of *B*.
Use a scale of 1cm represents 4 km.

(ii) Write down the bearing of *A* from *B*.

(3)

From the lighthouse at *B*, ships can be seen when they are within a range of 23 km of *B*.
A ship sails due East from *A*.

(b) Show that, on this course, this ship will not be seen from the lighthouse at *B*.
You must show your working.

(4)

(Total for Question 17 is 7 marks)

Based on Q17 in Draft SAMs

17 A piece of wood has a mass of x kg and a volume of 0.002 m^3.

Show that the density of the wood is $0.5x$ g/cm^3.

NEW

(Total for Question 17 is 4 marks)

18 Polly and Fiona play each other at chess and at snooker.

The probability that Polly wins at chess is 0.6
The probability that Polly wins at snooker is 0.7

Work out the probability that Polly does not win both games.

Same as Q19 on Draft SAMs

(Total for Question 18 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

THE FOLLOWING QUESTIONS WERE REMOVED:

3 Fozia and her three friends are going to travel from Bury to Manchester.
They are all going to go either by tram or by taxi.

If they go by tram, the cost will be £3.15 each.
If they go by taxi, the total cost of the taxi will be £3 plus £1.55 per mile.

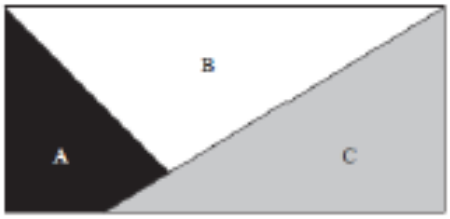
The distance from Bury to Manchester is 6 miles.

Fozia and her three friends want to travel from Bury to Manchester as cheaply as possible.

Should they travel by tram or by taxi?
You must show how you got your answer.

(Total for Question 3 is 3 marks)

8 The diagram shows a rectangle divided into three shapes, A, B and C.



The area of shape A is $\frac{2}{9}$ the area of the rectangle.

The area of shape B is $\frac{5}{12}$ the area of the rectangle.

(a) Write the area of shape A as a fraction of the area of shape B.
Give your answer in its simplest terms.

(2)

(b) What fraction of the area of the rectangle is the area of shape C?

(2)

(Total for Question 8 is 4 marks)

10 **A** and **B** are two rocks.

The weight of rock **B** is x kg.

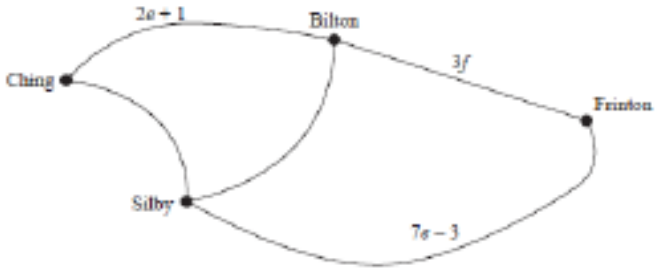
The weight of rock **A** is nine times the weight of rock **B**.

The difference between the weights of the two rocks is 5 kg.

Find the weight of rock **A**.

(Total for Question 10 is 4 marks)

11 The diagram shows 4 villages.
It also gives expressions, in terms of e and f, for the distances between some of the villages.



All distances are in kilometres.

Phuong goes for a walk.
The walk starts at Ching and finishes at Silby.

She walks from Ching to Bilton,
from Bilton to Frinton
and from Frinton to Silby.

(a) Write down an expression, in terms of e and f, for the total distance, in kilometres, Phuong walks.
Give your expression in its simplest form.

(2)

It takes Phuong $\frac{}{}$ hour to walk from Bilton to Frinton.

(b) Write down an expression, in terms of f, for Phuong 's average speed, in kilometres per hour, from Bilton to Frinton.

(1)

Phuong wants to know her speed in metres per second.

(c) Explain how to convert a speed in kilometres per hour to a speed in metres per second.

(2)

(Total for Question 11 is 5 marks)

18 Three tanks, A, B and C are used to store oil.

Tank A contains n litres of oil.
Tank B contains $(n + 150)$ litres of oil.
Tank C is empty.

Oil is pumped from tank A and from tank B into tank C so that all three tanks contain the same amount of oil.

500 litres of oil are pumped from tank A into tank C.

Work out the value of n.

(Total for Question 18 is 4 marks)