BANCROFT'S SCHOOL
Woodford Green, Essex, IG8 0RF
Telephone: 020 8506 6761
Email: admissions@bancrofts.org

MATHEMATICS

SAMPLE PAPER

11+

ENTRANCE EXAMINATION

Singapore MATHS ACADEMY

Brought to you by . . . .
www.SingaporeMathsAcademy.co.uk
- Group, Home, Online & 1-to-1 Tuition Support

BANCROFT'S SCHOOL
11+ ENTRANCE EXAMINATIONS
GUIDANCE NOTES FOR PARENTS

MATHEMATICS

Candidates will sit one paper, which is in two sections and lasts 75 minutes. A ruler, pencil and protractor will be needed, but not a calculator.

Section A:

Consists of about thirty questions in increasing order of difficulty. Questions will cover numeracy, problem solving and shape and space, and should be broadly accessible to children who are working towards level 5 at Key Stage Two. Some of the later questions may include elements from level 6.

Section D:

Contains more difficult, non-standard problems. We try to make these problems original yet accessible to mathematically talented children. Children should not attempt these questions until they have completed as much as they can in Section A. A high score in this section is not expected, but we will use the Section D score as additional evidence when we are identifying Scholarship candidates or as supplementary evidence for borderline candidates.

Preparation:

Children who are likely to cope comfortably with mathematics at Bancroft's should only need an experience of solving problems under timed conditions.

We find that excessive coaching for the paper can be counter-productive in the longer term. Section D questions are designed to test how the candidate copes with unfamiliar problems, and it is not intended that children should be taught any particular methods in preparation for this.

MATHEMATICS SAMPLE PAPER

11+ MATHEMATICS

Instructions

1. Answer as many questions as you can. If you get stuck, go on to the next question.

YOU ARE NOT EXPECTED TO BE ABLE TO ANSWER ALL OF THEM.

2. **SHOW ALL WORKING** – you may get marks for working even if you don't give the right answer. Use the space beside each question.

3. Write each answer in the space provided. The number in brackets is the number of marks for each question.

4. No calculators are allowed.

SECTION A

DO AS MUCH OF THIS SECTION AS YOU CAN.

IF YOU GET STUCK, GO ON TO THE NEXT QUESTION.

1. Fill in the missing numbers in the boxes.

$55 + \boxed{27} = 82$ 82 - 55 = 27

$\boxed{68} - 23 = 45$ 45 + 23 = 68

$60 \div \boxed{5} = 12$ 60 ÷ 12 = 5

$32 \times \boxed{20} = 640$ 640 ÷ 32 = 20

$0.75 \div \boxed{1} = \frac{3}{4}$

0.75 ÷ 0.75

(8 marks)

2. Add together 308, 86 and 4444.

4838 ...(2 marks)

3. Subtract three hundred and three

from six thousand and sixty.

5757 ...(2 marks)

4. Multiply 345 by 67.

23115 ...(2 marks)

5. Divide 3112 by 8.

389 ...(2 marks)

TURN OVER!

6. a) Angus and his six friends have collected 756 football stickers, which they all share out equally.

How many stickers do they each get?

7 people share 756 stickers.

756 ÷ 7 = 108 .....(2 marks)

b) Today is Emma's 29th birthday.

How many months old is she?

12 months in 1 year.

29 x 12 = (30 x 12) - 12

or

(29 x 10) + (2 x 10)

348 .....(2 marks)

c) Amar works for 45 weeks each year.

His total cost of travelling to and from work is £630 each year. How much is that per week?

£630 ÷ 45 = 14

450 180

÷45 ÷45

=10 =4

£ 14 .....(2 marks)

7. a) Look at these four decimals:

0.86	0.9	0.17	0.73

i) Write down the largest amount.

0.9 ...(1 mark)

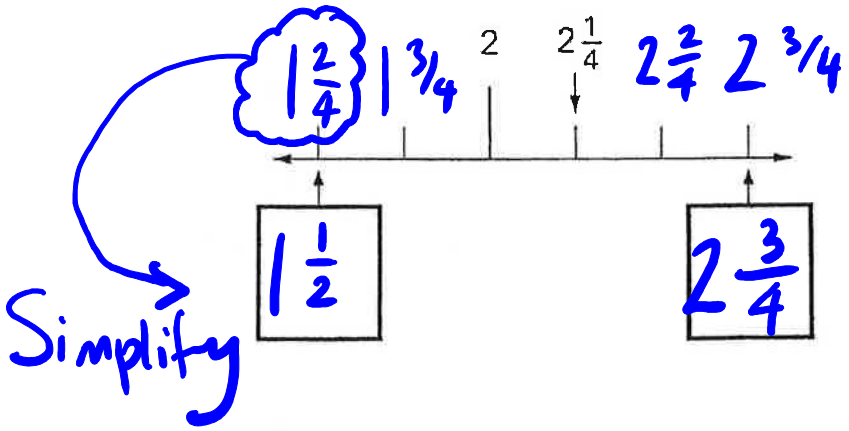
ii) Find the difference between the largest and smallest amounts.

$0.9 - 0.17 = 0.73$

0.73 (2 marks)

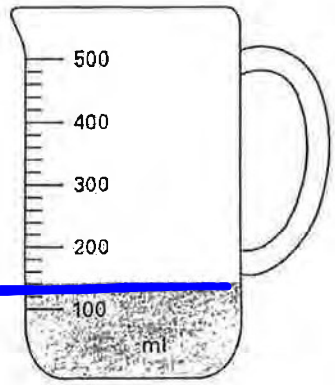
b) Here is part of a number line.

Write the two missing numbers in the boxes.



(2 marks)

8.



140ml

The jug contains some orange squash.

How much water must be added to make 500 millilitres of drink?

500 − 140 = 360 .....ml (2 marks)

---

9. At Redville Primary School, 16 of the teachers travel to work by car, 6 travel by bus and the other 3 walk.

Car	Bus	Walk
16	6	3

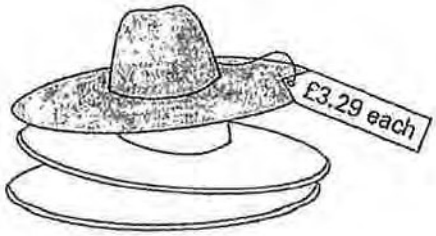
What *percentage* of the teachers travel by car?

$\frac{16}{25} = \frac{64}{100} = 64\%$ .....64.....% (2 marks)

---

10. a) Clarissa buys the sunglasses and a sun hat.

How much change, *in pounds*, does she get from a £10 note?



£10 − (£5.85 + £3.29)

£10 − £9.14 = £0.86

£ 0.86 .....(2 marks)

b) Jo and Aisha bought identical jeans from a market stall.

Jo got 10 % discount off the full price.

Aisha got 15% discount off the full price.

Jo paid £1.20 more than Aisha.

What was the full price of the jeans?

Jo: £1.20 | 10%

Aisha: 5% | 10%

5% of price is £1.20

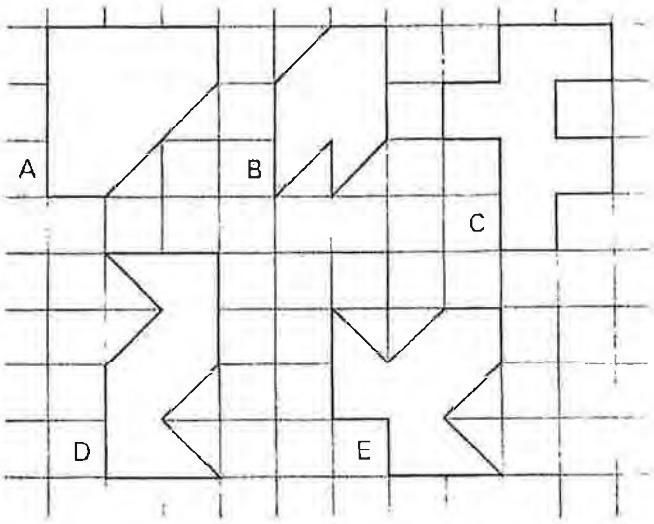
10% of price is £2.40

100% of the price = £24

£ 24 .....(2 marks)

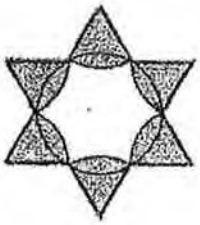
11. a) Here are five shapes on a square grid.

Write the letters of the two shapes which have a line of symmetry.



A and E (2 marks)

b)



How many lines of symmetry does the shape on the left have?

6 (1 mark)

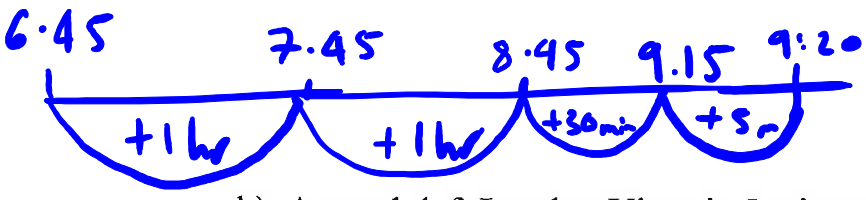
c) If you looked in a mirror at an accurate clock at 1:30pm, which one of the following (A, B, C, D or E) would you see?

A B C D E

E (2 marks)

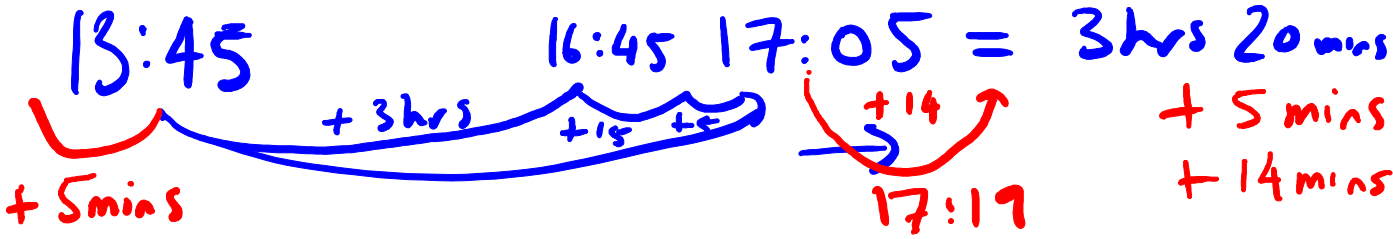
12.a) A film starts at 6:45pm and lasts for 2 hours 35 minutes.

At what time will it finish?



9.20 .....(1 mark)

b) A coach left London Victoria 5 minutes late, at 13:45, and arrived in Banbury 14 minutes early, at 17:05. How long should the journey have taken if the coach had left and arrived on time?

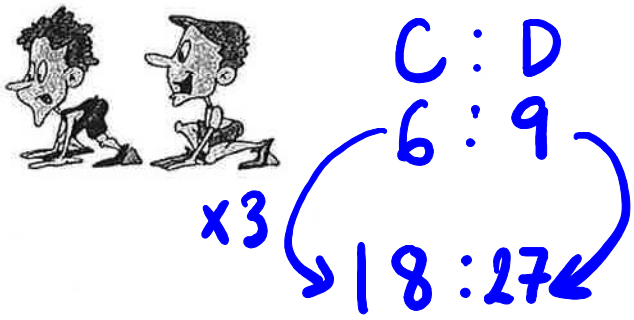


.....3.....hours .....39.....minutes (2 marks)

c) Chris runs round a track at a speed of 6 km/hour.

Dave runs round the same track at a speed of 9 km/hour.

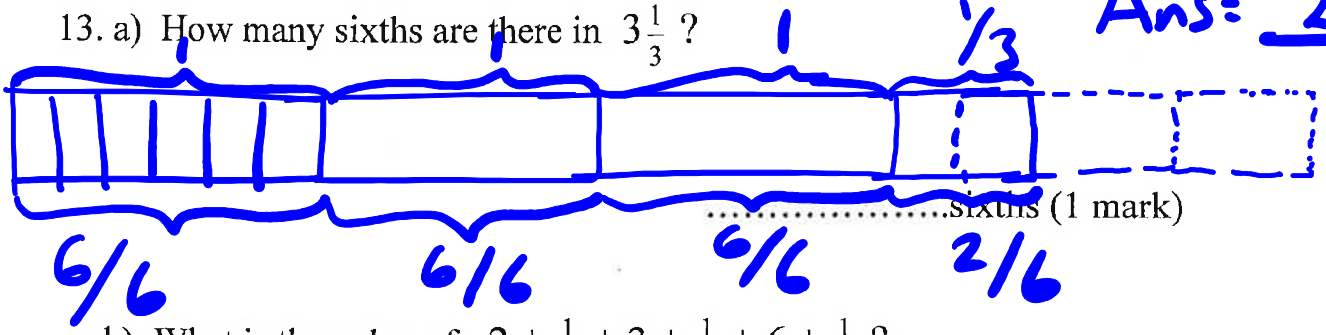
When Chris has run 18 laps, how many laps has Dave run?



.....27.....laps (2 marks)

13. a) How many sixths are there in $3\frac{1}{3}$?

Ans: 20



.....sixths (1 mark)

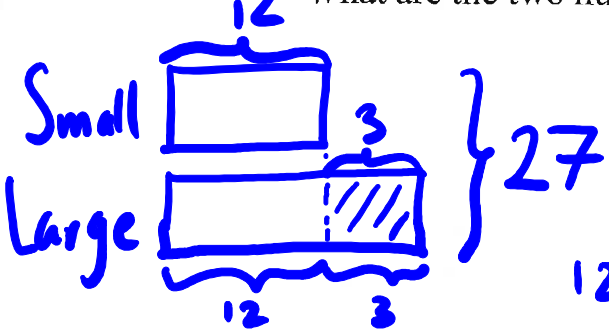
b) What is the value of $2 + \frac{1}{2} + 3 + \frac{1}{3} + 6 + \frac{1}{6}$?

$2+3+6=11$ $11+1=12$

$\frac{1}{2}+\frac{1}{3}+\frac{1}{6}=\frac{3}{6}+\frac{2}{6}+\frac{1}{6}=1$ 12 .....(2 marks)

14. a) Two numbers have a difference of 3 and a sum of 27.

What are the two numbers?



$27-3=24$

2 units = 24

1 unit = 24 ÷ 2

1 unit = 12

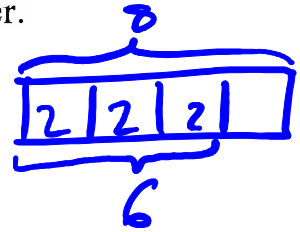
12 .....and..... 15 ..... (2 marks)

$12+3=15$

b) Start with the number 20, then multiply by 4, then add 16,

then divide by 12, then find three-quarters of your answer.

What number do you get?

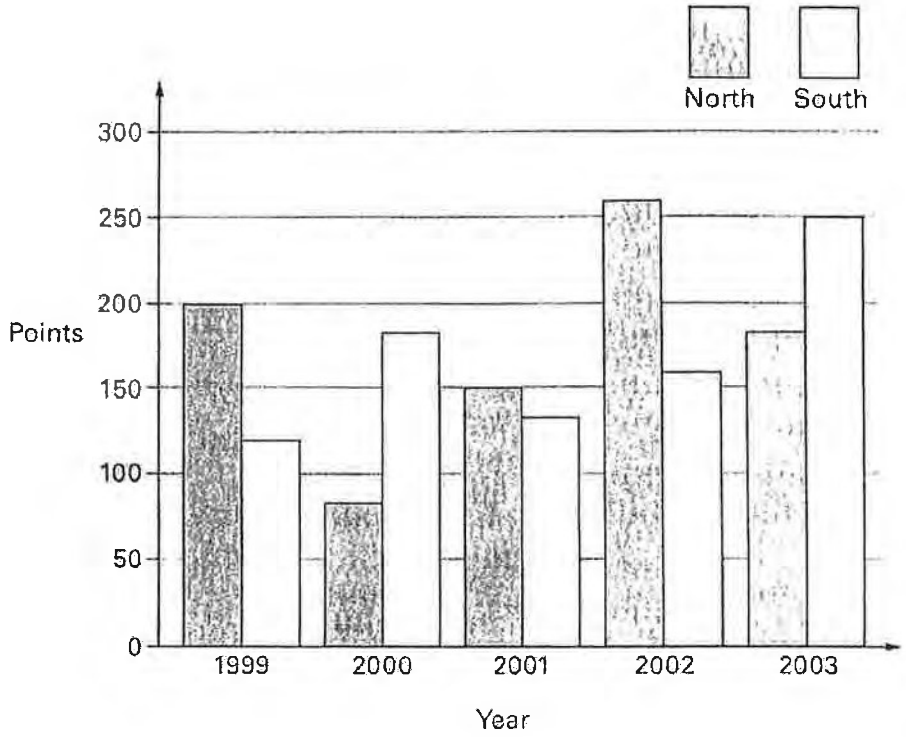


$\frac{(20\times4)+16}{12}=\frac{96}{12}=8$

6 .....(2 marks)

15. Each year a school has a quiz between two teams, North and South.

The diagram shows the results.



i) In which year did North beat South by 100 points?

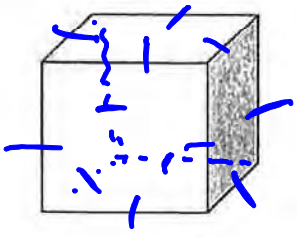
2002 ....(1 mark)

ii) In which year did South beat North by the greatest amount?

2000 ..(1 mark)

---

16. The total length of the edges of a cube is 240 cm.



What is the length of one edge? 12

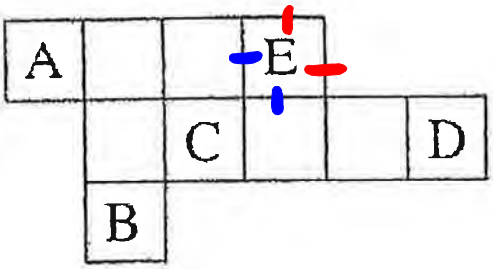
240 ÷ 12

20 .....cm (2 marks)

---

17. The diagram shows a shape made from ten square tiles.

Which labelled tile (A, B, C, D or E) could be removed without changing the perimeter of the shape?



E ..... (2 marks)

---

18. Here is some information about three different squares:

The *area* of Vikram's square is 64 cm^2.

The *length of a side* of Kim's square is 64 cm.

The *perimeter* of Ali's square is 64 cm.

8cm 64cm²

8cm

64 ÷ 4 = 16 cm

i) Who has the largest square?

Kim's ..... (1 mark)

ii) Who has the smallest square?

Vikram's ..... (1 mark)

---

19. In a magic square, the totals for each row, column and diagonal are the same.

i) Fill in the missing numbers in this magic square.

3	10	5
8	6	4
7	2	9

(2 marks)

ii) Find the value of ☺ in this magic square.

(You do *not* need to complete the whole magic square.) — Why? → Save time

14		7	2
☺		12	
4	5	9	16
15			3

③ Work out the answer

② Work this out

① gives us total = 34

③ 34 − (14 + 4 + 15) = 1

② 16 + 9 + 5 = 30

34 − 30 = 4

☺ = 1 .....(2 marks)