Alleyn's

ENTRANCE & SCHOLARSHIP EXAMINATION: SAMPLE PAPER

For 11+ Candidates
MATHEMATICS

Time allowed: 1 hour

Calculators MAY NOT be used. Answer as many questions as you can. If you cannot do a question, leave it and go on to the next. Show your working, as there may be marks given for working out.

(Decimal Separators: The symbol used to separate the integer part of a decimal from its fractional part is called the decimal point. Candidates from overseas should be aware that in Britain the decimal point is denoted by a period (eg 31.241). In some countries the notation is different: for example, many European countries use a comma in place of the decimal point (eg 31,241). Candidates are expected to be aware of the British system for decimal points and should note that questions will be set in this style; however, the candidate's own answer may be written in the style that is familiar to them.)

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June 2014

MULTIPLE CHOICE

Circle the one option that gives the correct answer

1 From the units listed below choose the most appropriate unit to measure the length of an ant:

A mm B cm C m D km E g

2 What is the value of the digit 1 in the number 6543.2109

A ten B one tenth C one hundred D one hundredth E One thousandth

3 If you put the following in order of size, which one is the largest?

A 2.47 B 1.8 C 2.1 D 1.06 E 2.6

4 How many lines of symmetry does a pentagon have?

A 1 B 3 C 5 D 7 E 10

5 0.6 is the same as:

A $\frac{1}{6}$ B $\frac{3}{5}$ C $\frac{2}{3}$ D $\frac{1}{3}$ E $\frac{6}{100}$

6 How long is it from 0855 to a quarter to 11?

A 2 hrs 5 mins B 2 hrs 10 mins C 2 hrs 20 mins D 1 hr 55 mins E 1 hr 50 mins

7 Through what angle has the minute hand turned between 1205 and 1250

A 90° B 120° C 180° D 225° E 270°

8 35097 when written in words is:

A Thirty five thousand nine hundred and seventy
B Three hundred and fifty thousand and ninety seven
C Thirty five thousand and ninety seven
D Thirty five thousand nine hundred and seven
E Thirty nine thousand and fifty seven

9 How many millimetres are there in a metre?

A 0.001 B 0.01 C 10 D 100 E 1000

10 What is the correct answer to 6 + 4 x 3

A 30 B 18 C 22 D 6 E -6

11 (a) $213 + 672 =$ ..... (b) $803 - 572 =$ .....

(c) $792 \times 81 =$ ..... (d) $8 \overline{)12368}$

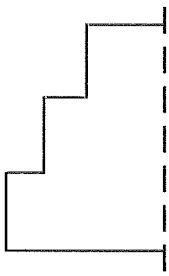
(e) $23 \overline{)3381}$ (f) $69.5 - 4.86 =$ .....

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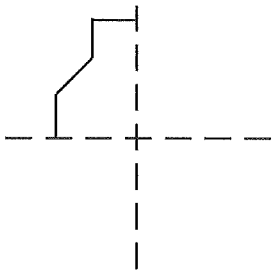
12 (a) $\frac{2}{3} + \frac{1}{6} =$ ..... (b) $\frac{5}{8} - \frac{5}{12} =$ .....

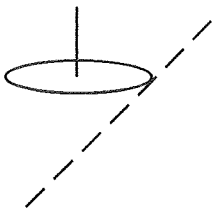
(c) $2\frac{4}{5} + 3\frac{8}{9} =$ ..... (d) $3\frac{1}{4} - \frac{5}{6} =$ .....

13 Complete the following shapes that are symmetrical about the broken lines.
Complete the shapes.









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14 I had £100 given to me for my birthday.

I saved $\frac{3}{5}$ of it, and spent $\frac{1}{4}$ of it on CDs.

Then I bought a magazine for £2.50. The rest of it I used for a present for my father.

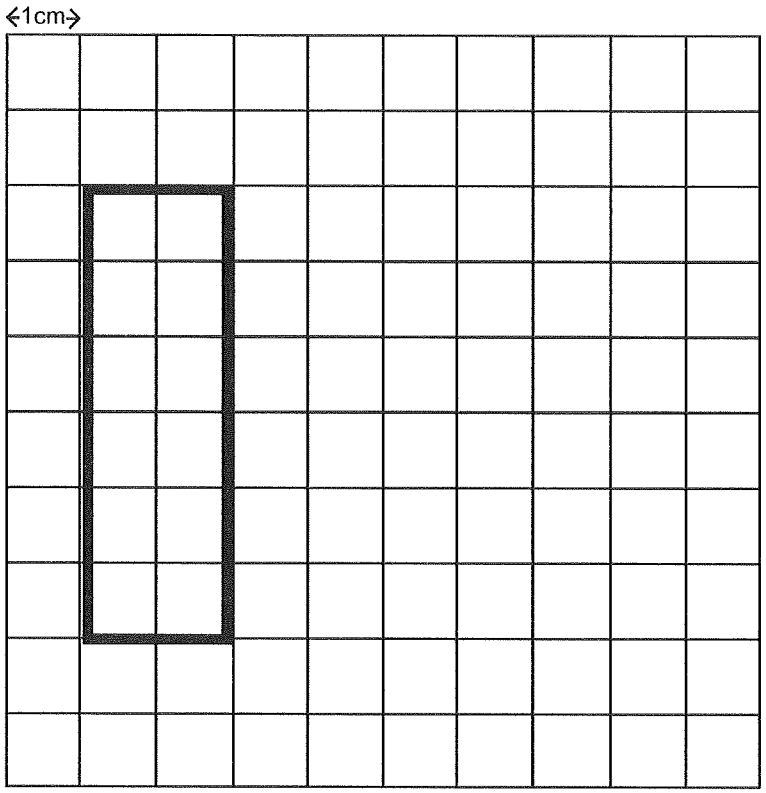
(a) How much was the present?

Ans .....

(b) What fraction was this of my original amount?

Ans .....

15



(a) What is the perimeter of this rectangle? ..... cm

(b) What is the area of this rectangle? ..... cm^2

(c) Draw another shape that has the same perimeter but a bigger area.

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16 I asked 12 shoppers on Monday how much money they had in loose change.

Here are my results (in pence):

42, 53, 45, 50, 51, 43, 47, 51, 46, 50, 47, 51

What is the mean (average) amount they had?

Ans .....

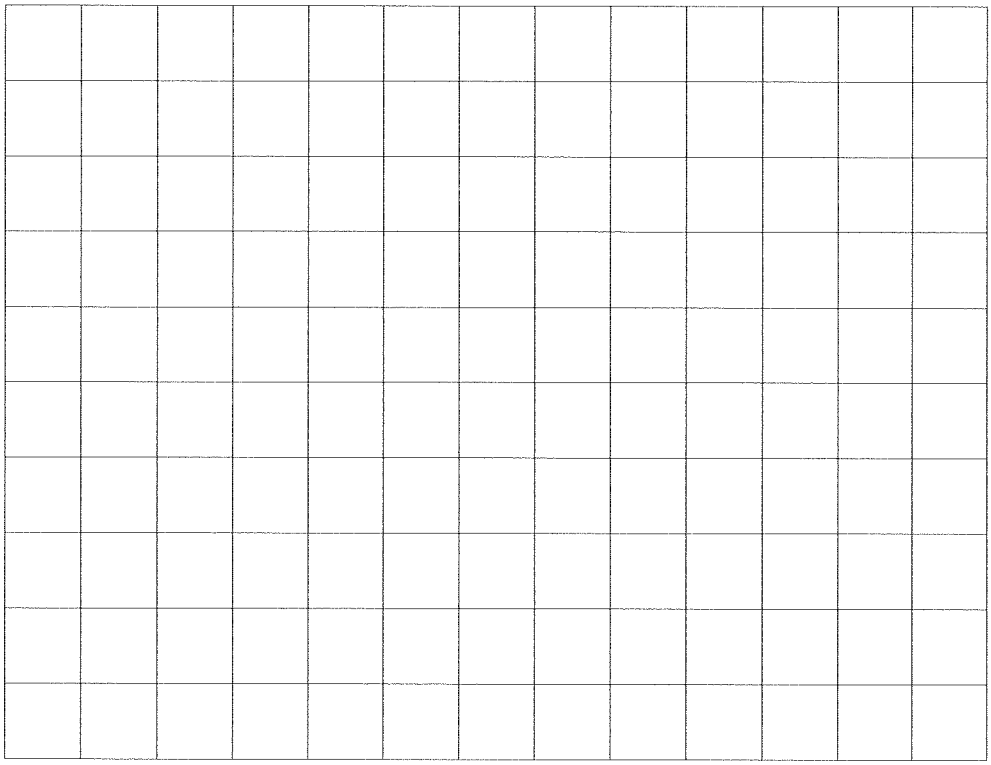
On Tuesday I asked another group of shoppers, and found that they had between 35p and 61p each, with a mean value of 48p. What similarities and differences are there between the two groups?

17

14	18	15	~~12~~	19	13	17	15	21	24
16	21	~~12~~	15	~~12~~	18	16	15	17	18
17	14	~~12~~	20	22	16	19	21	15	17
18	~~12~~	19	16	20	14	18	23	19	24
19	15	19	17	14	18	15	18	22	17

Complete the following Tally chart and frequency table, then draw a bar chart below.

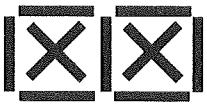
Number	Tally	Frequency
12	𝍸	5
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		



18



6 sticks



11 sticks



16 sticks

Draw the next two shapes:

How many sticks would be needed to make the pattern with 10 boxes?

Ans .....

Complete the formula for the number of sticks needed to make the pattern of boxes:

Sticks= Boxes x ☐ + ☐

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19 Here is part of a train timetable:

Ayre	1200	1230	1300	1330	1400
Braintree	1220		1325		1425
Chepstow	1236	1255	1340	1355	1439
Doncaster	1254	1310	1400		1458
Epsom	1305	1320		1420	1507
Fontwell	1320	1334	1420	1433	1520

(a) Which is the fastest train from Ayre to Fontwell?

Leaves Ayre at: .....

(b) If I miss the 1310 from Doncaster because I arrive at the station at 1336, how long must I wait until the next train to Epsom?

Ans .....

(c) I have to meet someone at their home in Doncaster at 3pm, they live 20 minutes from the station. Which train must I catch from Braintree so that I can meet them on time?

Ans .....

20 Here is my shopping list. Using the price list below fill in the cost for each item and the total cost.

(Price list: Dingles crisps: 26p single packets; £1.20 six pack

Milk: 1*l* 83p; 2.5*l* £2

Sugar: 1*kg* 56p

Stamps: 1st class 27p; 2nd class 23p

Apples: £1.20 per *kg*)

2*kg* sugar	.....
4 packets of crisps	.....
5*l* milk	.....
750*g* apples	.....
3 first class stamps	.....
Total	.....

How much change will I get from £10?

Ans .....

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21 The probability of getting a score of 3 on this spinner is $\frac{2}{8} = \frac{1}{4}$

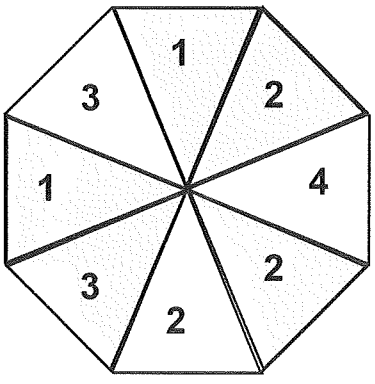
What is the probability of getting

(a) a score of 1? .....

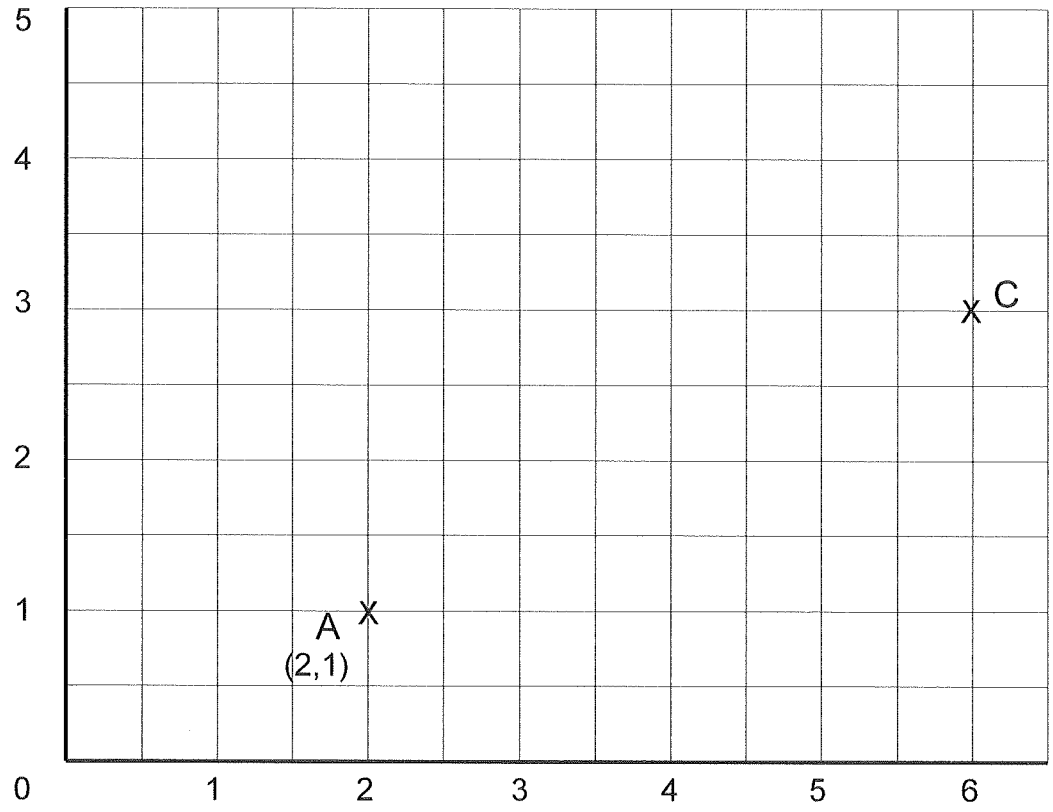
(b) an even number? .....

(c) an odd, shaded number? .....

(d) a prime number? .....



22



Plot point **B** whose coordinates are (3,4)

Write down the coordinates of point **C** (,)

Where would point **D** be if the shape was a square? Mark it on the grid, label it **D** and give its coordinates. D (,)

TURN OVER ONLY WHEN YOU HAVE ATTEMPTED ALL THE QUESTIONS SO FAR

23 In the car park there are 25 cars, 5 have L-plates, 12 have GB-plates and 12 have neither.

(a) How many have an L-plate but not a GB-plate?

Ans .....

(b) How many have got a GB-plate and an L-plate?

Ans .....

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24 Take a 2 digit number, then reverse it. Take the smaller number away from the larger.

Examples:
26: (reversed becomes 62) 62 - 26 = 36
71: (reversed becomes 17) 71 - 17 = 54

Try some more for yourself.

What do you notice about the answers? Is it always true? Can you tell why?