JOHN LYON
HARROW-ON-THE-HILL

11+ ENTRANCE EXAMINATION

Mathematics

SAMPLE PAPER

Time allowed: 60 minutes

Instructions

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

Information

- The total mark for this paper is 100.
- Calculators are NOT allowed
- The marks for each question are shown in bracket use this as a guide as to how much time to spend on each question.

Advice

- Write your answers on the dotted lines provided.
- Show your working so it is clear how you obtained your answers.
- Try to answer every question.
- Check

Candidate Name _____

Candidate Current School _____

1. a) Write down the number eighteen thousand and thirty six in figures.

Answer: .....
(1)

b) Write down the number eleven and nine thousandths as a decimal.

Answer: .....
(1)

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2. Calculate 572 + 2639

Answer: .....
(1)

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3. Calculate 6431 - 729

Answer: .....
(2)

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4. Calculate 893 x 87

Answer: .....
(2)

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5. Calculate 2874 ÷ 6

Answer: .....
(2)

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6. A menswear shop sells 7 times as many white shirts as checked shirts. 72 shirts are sold in total. How many white shirts are sold?

Answer: .....
(2)

7. Gavin buys four bottles of cola at £1.09 each and 8 chocolate bars at 62p. How much change should he receive from a ten-pound note?

Answer: £.....
(2)

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8. A length of rope is 5m long. It is cut into four unequal lengths. Three of the pieces are 147cm, 132.5cm and 67cm. How long is the fourth piece?

Answer: .....cm
(3)

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9. Fill in the missing numbers to make each equation correct.

e.g. 36 + 32 = 49 + ……19

a) 92 + 29 = 47 + ……

b) 87 – 48 = 63 - …….

c) 50 x 9 = 9 x …….

d) 9600 ÷ 80 = 720 ÷ …….

(4)

10. Sara thinks of a number. She subtracts twelve, then divides by two and then adds fifteen. Her answer is 37. What is the number that Sara first thought of?

Answer: .....

(3)

11. Tom is 142cm tall and Harry is 168cm tall. James is half way between Tom's and Harry's height. Work out James' height.

Answer: .....cm

(4)

12. A cyclist cycles 45 kilometres in 3 hours. How many minutes does it take him to cycle 1500 metres at the same rate?

Answer: .....mins

(3)

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13. For each set of numbers put a **circle** around the **smallest number** and **<u>underline</u>** the **largest number**.

a) 2.506 2.56 2.006 2.056 2.6

b) $\frac{1}{4}$ $\frac{6}{7}$ $\frac{7}{8}$ $\frac{8}{9}$ $\frac{1}{5}$

c) $\frac{9}{20}$ 0.55 $\frac{3}{5}$ 0.25 $\frac{53}{100}$

d) 28cm $\frac{1}{5}$ m 2600mm 0.28m 25cm

(6)

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14 3 masses are measured to be 720g, 3.46kg, and 2kg 53g.
What is their total mass, give your answer in grams.

Answer: .....g
(2)

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15. I am thinking of a number.

It is less than 100.

It is odd.

It is a square number.

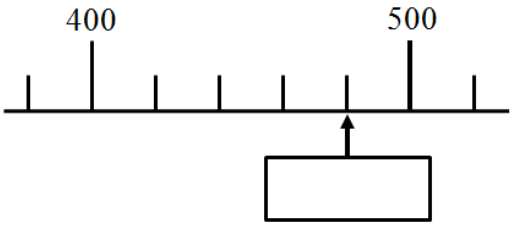
It is not a multiple of three nor five.

Write down the two possible values of my number

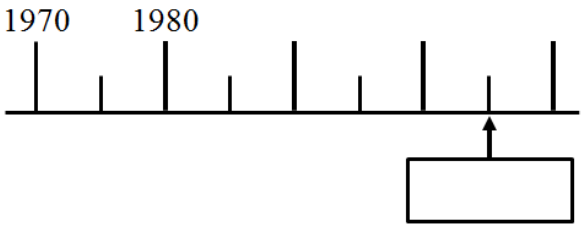
Answer: .....
(3)

16. Here are parts of four different number lines. Write in the number indicated by the arrow.

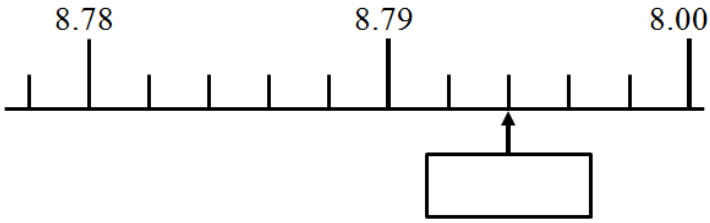
a)



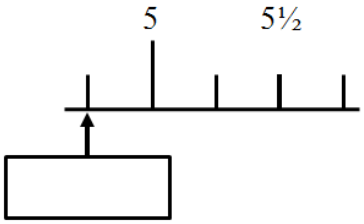
b)



c)



d)



(6)

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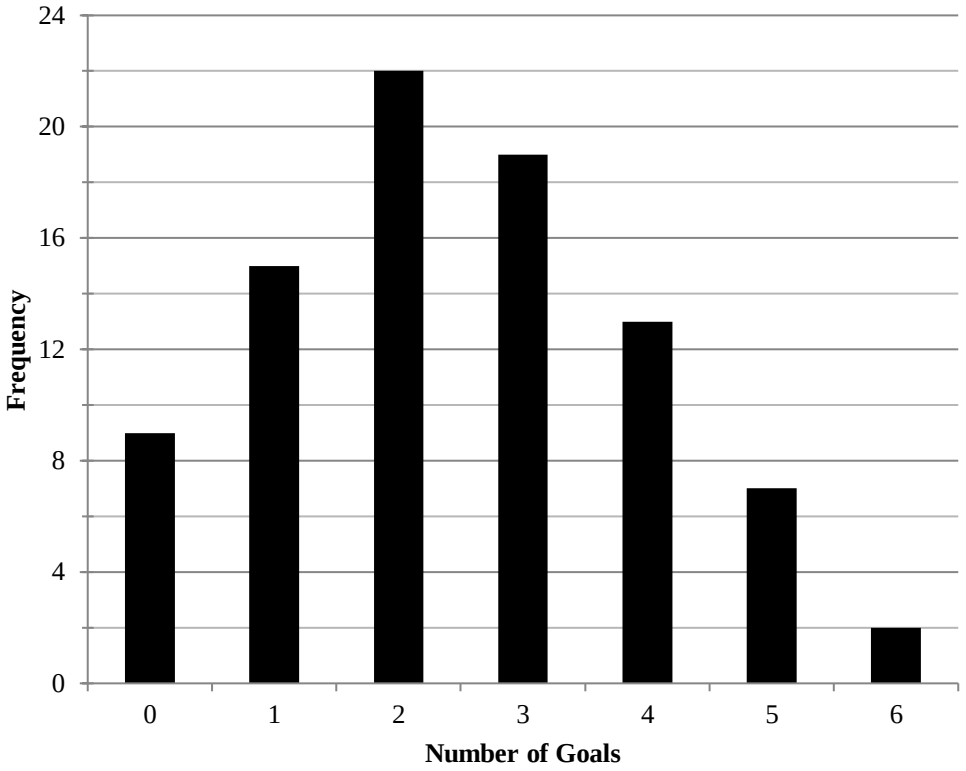
17. Write down two fractions which are equivalent to $\frac{4}{5}$ where one of the numbers is twenty.

Answer: ..... or .....

(3)

18. The bar chart shows the number of goals scored by entrants in a penalty competition.



a) What was the highest number of goals scored? Answer…….

b) How many people scored **more** than two goals? Answer: ……

c) How many people took part in the competition? Answer: ……

d) How many goals were scored altogether? Answer: ……

(8)

19. Complete the diagram so that it has reflective symmetry in the dotted line.

(3)

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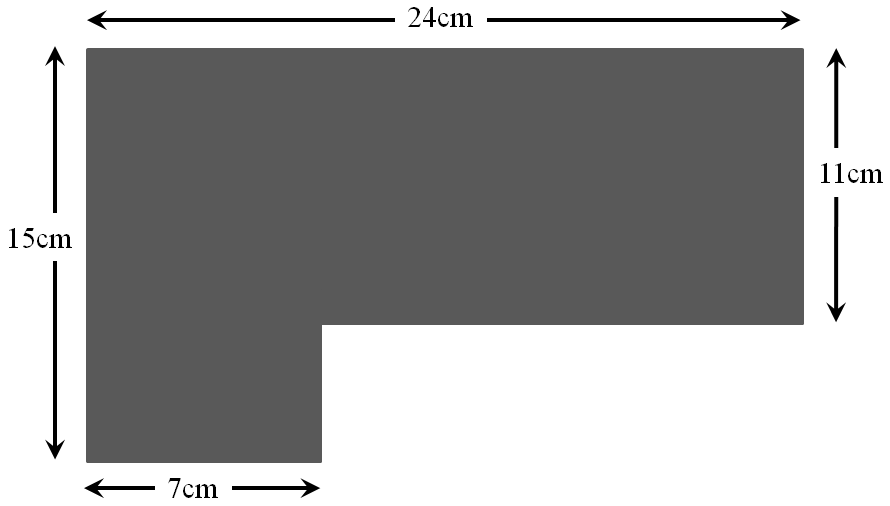
20. What is the area of this shape?



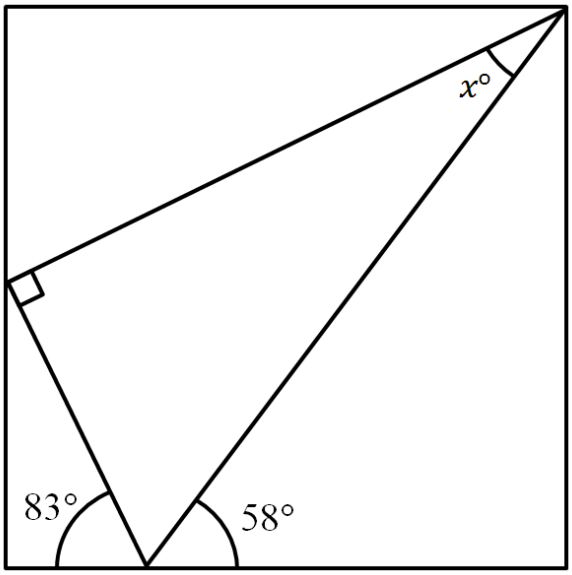
Not to scale

Answer: …….cm^2

(4)

21. Here is a **right angled triangle** inside a **rectangle**. Calculate the value of angle **x**.

Do **not** use a protractor.



Answer: ……

(4)

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22. This calculation is correct: **396 x 279 = 110484**

Use this result to answer these questions:

a) 3.96 x 2.79 Answer: ……

b) 110484 ÷ 279 Answer: ……

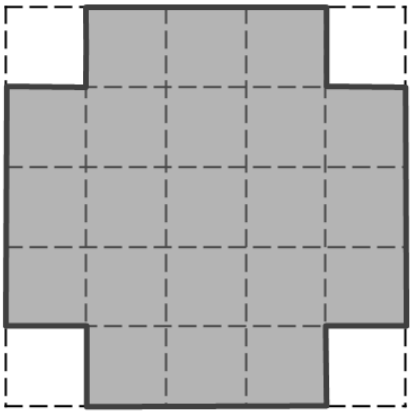
c) 1104.84 ÷ 2.79 Answer: ……

d) 1104.84 ÷ 396 Answer: ……

(8)

23. A tile in the shape of a cross is made by drawing a square of length 10cm and then removing four squares of length 2cm from each corner.

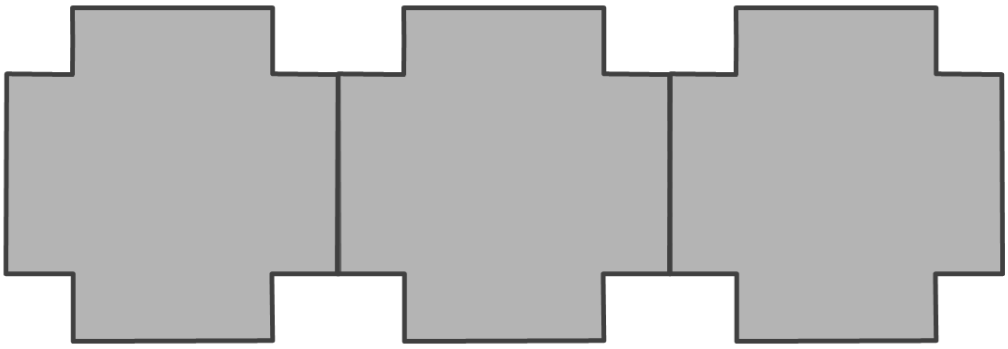
What is the perimeter of the cross shape tile?



Answer: ……cm

(3)

Robert puts three tiles together to make the shape below. What is the perimeter of his shape?



Answer: ……cm

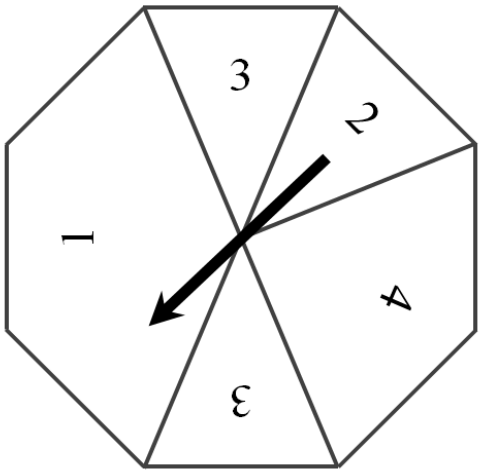
(3)

Ravi put ten tiles together in a similar way. What is the perimeter of his shape?

Answer: ……cm

(3)

24. a) Here is an octagonal spinner:



For each statement put a tick (✓) if it is true or a cross (x) if it is false.

3 is the **most likely** score ……

3 and 4 are **equally likely** scores ……

Odd and even scores are **equally likely** ……

A score of less than 2 is **more likely** than a score of 2 or more ……

(6)

b) John is designing a spinner. He wants it to only have the numbers 1, 2, 3 and 4 on.

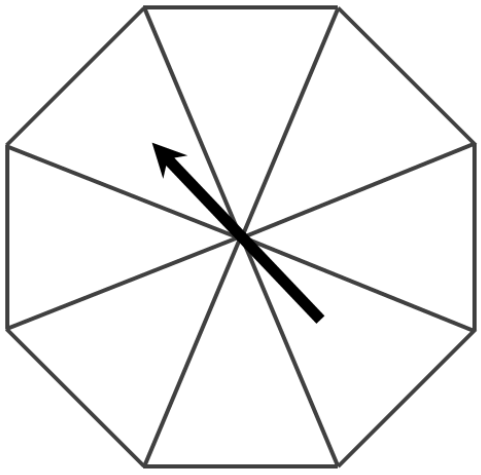
He wants the probability of getting a 4 to be 0.5.

He wants the probability of getting a 2 and a 3 to be equally likely.

He wants the probability of getting a 1 to be greater than the probability of getting a 3.

Enter the number(s) 1, 2, 3 or 4 into each of the eight sections of the spinner.

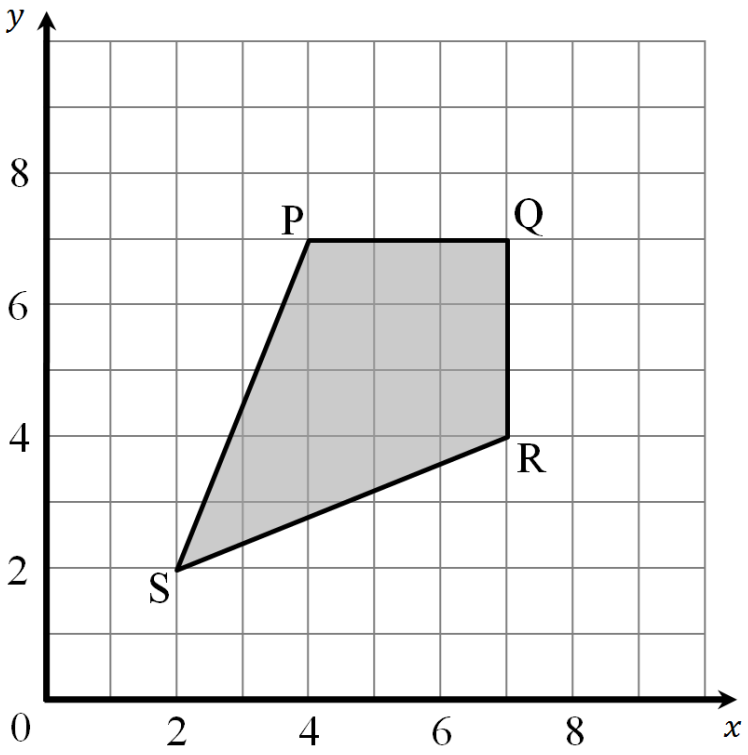
(5)



25. With reference to the shape below:

a) Write down the co-ordinates of the point **P** ……..
(2)

b) Name the quadrilateral **PQRS** ……..
(2)



END OF EXAMINATION