



**JOHN
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HARROW-ON-THE-HILL

11+ ENTRANCE EXAMINATION PAPER

SPECIMEN

MATHEMATICS

Time allowed: 1 hour

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

- Calculators are NOT allowed.

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 your answers if you have time at the end.

PLEASE COMPLETE IN CAPITAL LETTERS:

FIRST NAME:

SURNAME:

CURRENT SCHOOL:

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

Answer:

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

Answer:

2. Calculate $572 + 2639$

Answer:

3. Calculate $6431 - 729$

Answer:

4. Calculate 893×87

Answer:

5. Calculate $2874 \div 6$

Answer:

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:

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: £.....

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

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

e.g. $36 + 32 = 49 + \mathbf{19}$

a) $92 + 29 = 47 + \dots\dots\dots$

b) $87 - 48 = 63 - \dots\dots\dots$

c) $50 \times 9 = 9 \times \dots\dots\dots$

d) $9600 \div 80 = 720 \div \dots\dots\dots$

10. Jennifer 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:

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

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

13. For each set of numbers put a **circle** around the **smallest number** and **underline** 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

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

15. I am thinking of a number.

It is less than 100.

It is odd.

It is a square number.

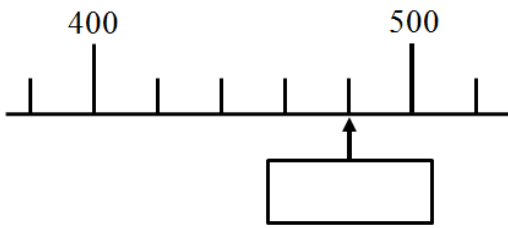
It is not a multiple of three nor five.

Write down the two possible values of my number

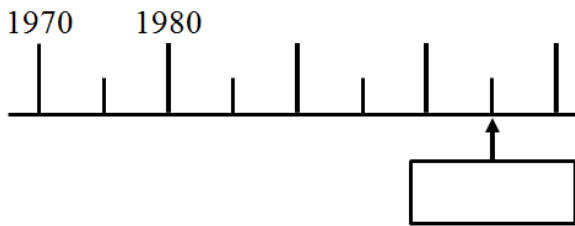
Answer:

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

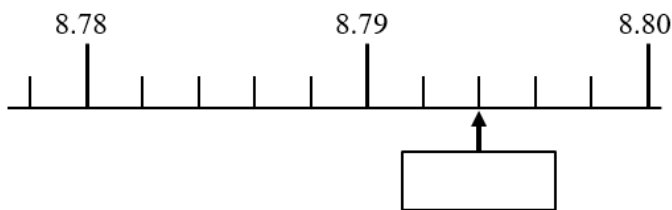
a)



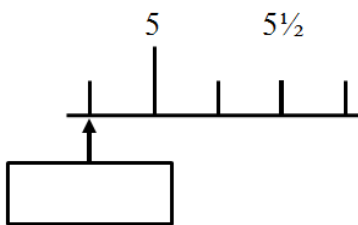
b)



c)



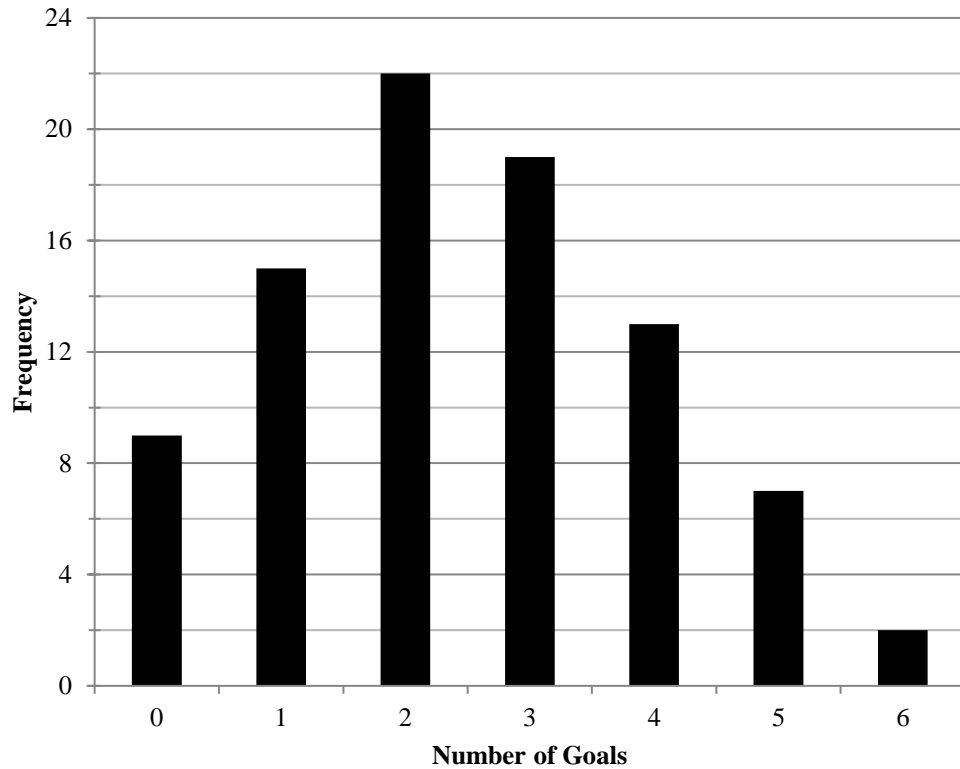
d)



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

Answer: or

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:

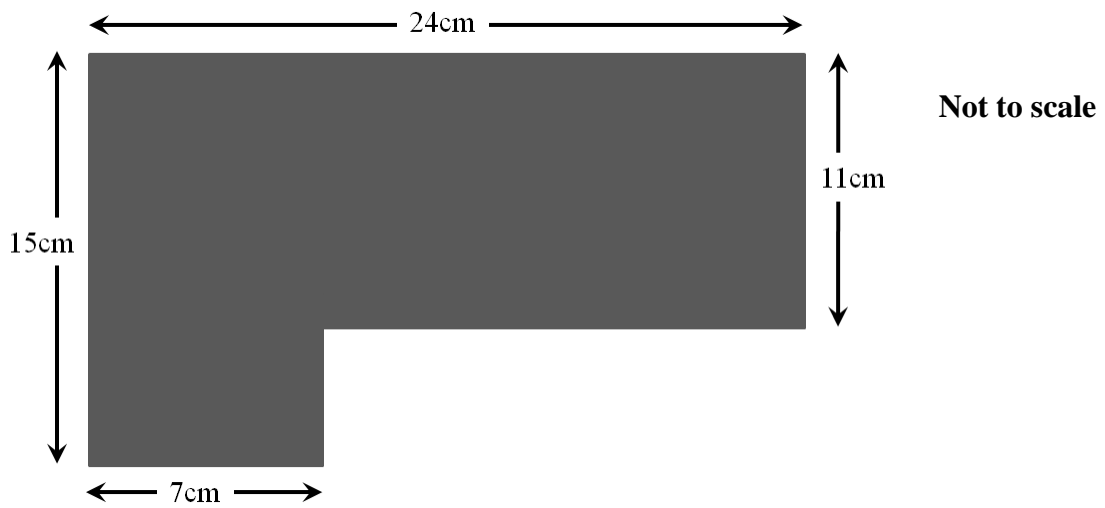
c) How many people took part in the competition? Answer:

d) How many goals were scored altogether? Answer:

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

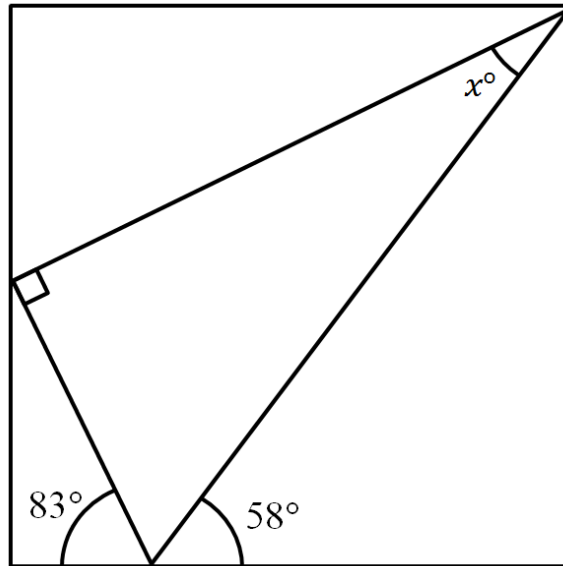


20. What is the area of this shape?



Answer: cm^2

21. Here is a **right angled triangle** inside a **rectangle**. Calculate the value of angle **x**.
Do **not** use a protractor.



Answer:

22. This calculation is correct: **$396 \times 279 = 110484$**

Use this result to answer these questions:

a) 3.96×2.79

Answer:

b) $110484 \div 279$

Answer:

c) $1104.84 \div 2.79$

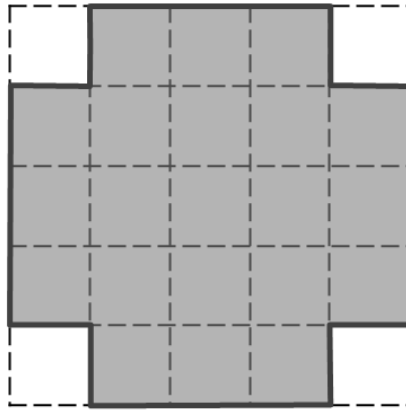
Answer:

d) $1104.84 \div 396$

Answer:

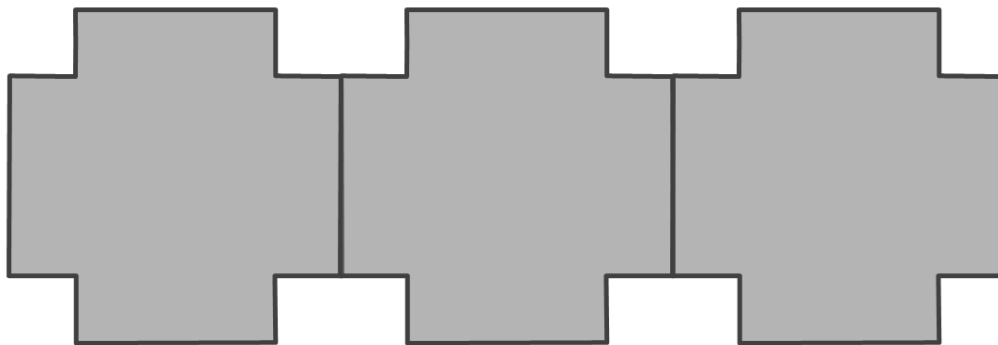
23. A tile in the shape of a cross is made by drawing a square of length 10cm and then removing four squares of length 2cm from each corner.

What is the perimeter of the cross shape tile?



Answer:cm

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

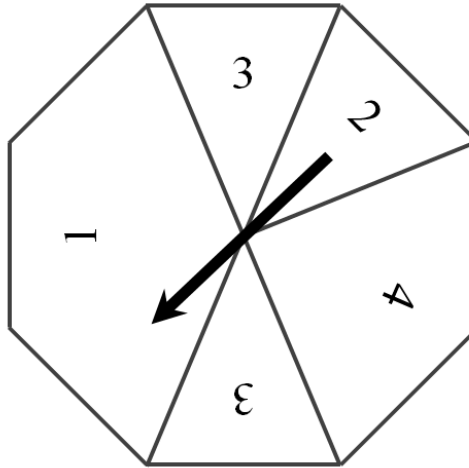


Answer:cm

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

Answer:cm

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

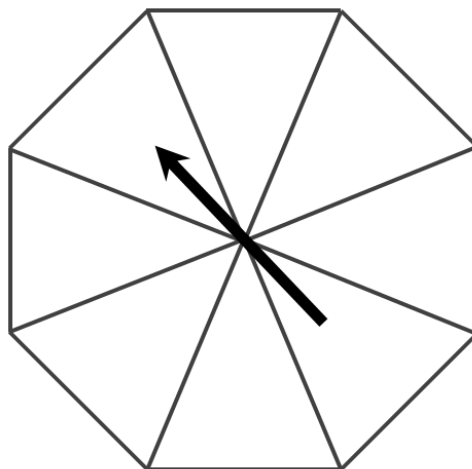
b) John is designing a spinner. He wants it to only have the numbers 1, 2, 3 and 4 on.

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

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

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

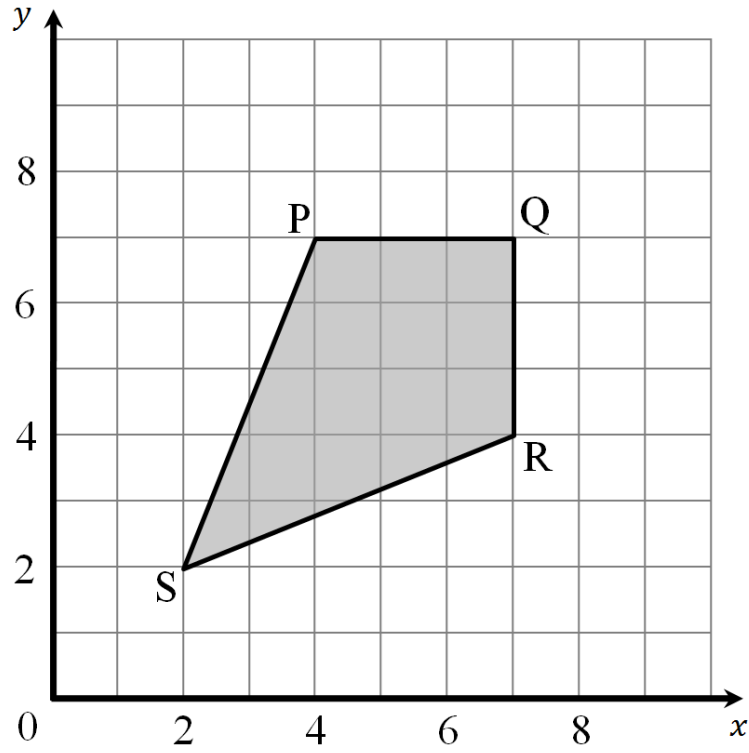
Enter the number(s) 1, 2, 3 or 4 into each of the eight sections of the spinner.



25. With reference to the shape below:

a) Write down the co-ordinates of the point **P**

b) Name the quadrilateral **PQRS**



END OF EXAMINATION