



THE KING'S SCHOOL

C H E S T E R

ENTRANCE EXAMINATION
MATHEMATICS
Specimen Paper

Time allowed: 45 minutes

- Answer as many questions as you can.
- Write your answers in the spaces provided.
- Show any working in the spaces between the questions.
- If you cannot answer a question, go on to the next one. Return to it later if you have time.
- Calculators may not be used.

1. Calculate the following, showing your working clearly

(i) $12.31 + 1.75$

Answer.....

(ii) $2.76 - 1.842$

Answer.....

(iii) 128×47

Answer.....

(iv) 110×0.2

Answer.....

2. Place the following numbers in order of size from smallest to largest:

4.2101

4.1021

4.0121

4.0211

Answer

3. Circle the amounts below which can be made using three UK coins

71p

72p

73p

74p

75p

4. Divide 623 by 8, giving your answer and the remainder.

Answer.....remainder

5. Complete the boxes with +, −, ×, ÷ to make the statements correct. The first one has been done for you as an example.

$$8 \quad \boxed{\times} \quad 3 = 28 \quad \boxed{-} \quad 4$$

(i) $21 \quad \boxed{} \quad 3 = 5 \quad \boxed{} \quad 2$

(ii) $18 \quad \boxed{} \quad 6 = 120 \quad \boxed{} \quad 12$

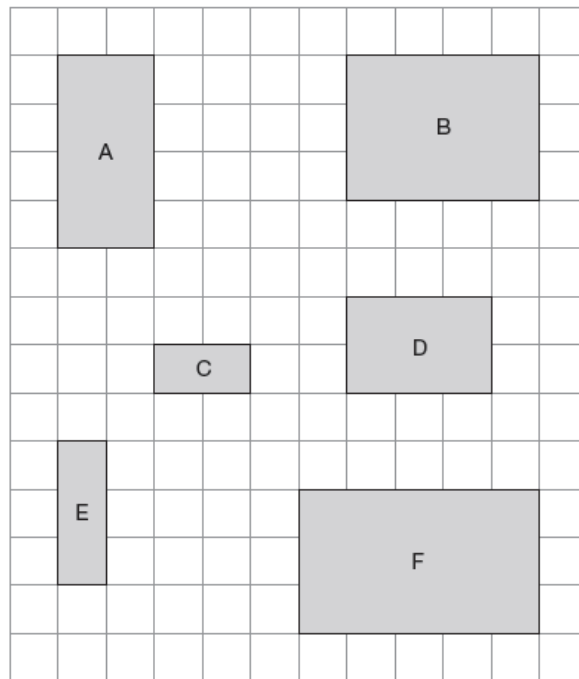
6. (i) Round 12.7 to the nearest whole number

Answer.....

- (ii) Round 44 350 to the nearest 1000

Answer.....

7. Two of the shapes below fit together to make a square. Which are they?



Answer..... and

8. Write these fractions in order of size from the smallest to the largest.

$$\frac{1}{2}$$

$$\frac{3}{8}$$

$$\frac{1}{3}$$

$$\frac{5}{12}$$

$$\frac{7}{24}$$

.....

.....

.....

.....

.....

9. Write down the next term for each of these sequences.

(i) 3 7 11 15

(ii) 303 300 297 294

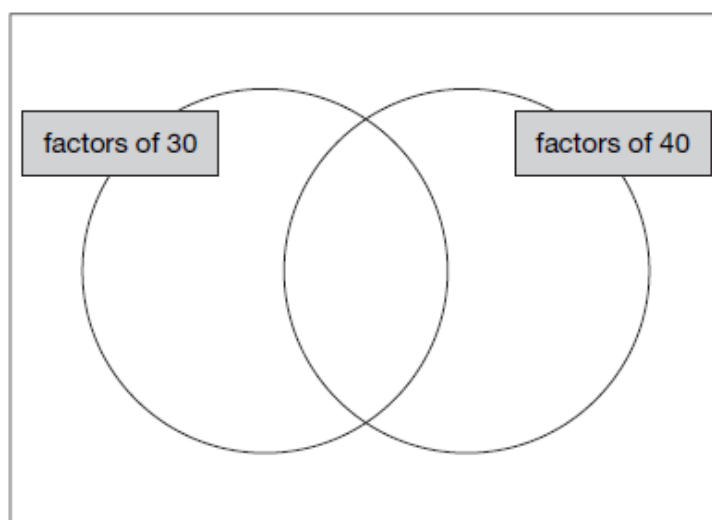
(iii) 1 1 2 3 5 8

Find the 100th term of the sequence in part (ii).

Answer.....

10. Put the following numbers into the correct positions in the diagram below:

5 6 7 8

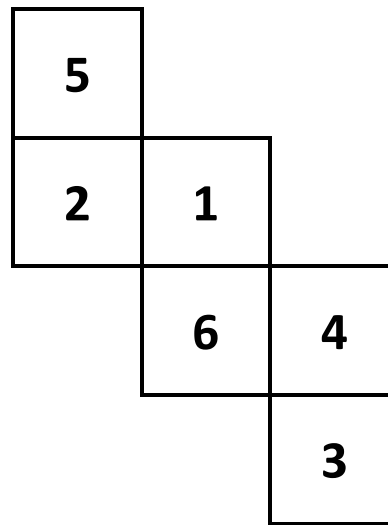


- 11.** Fill in the missing values in the table below to show the fraction, decimal and percentage equivalents of the numbers.

Give the fractions in their simplest form.

	Fraction	Decimal	%
A	$\frac{3}{10}$	0.3	30%
B	$\frac{1}{5}$		
C			24%
D		0.34	

- 12.** Alice makes a die from the net below.



Which number will be opposite

- (i) The number 1

Answer.....

- (ii) The number 2

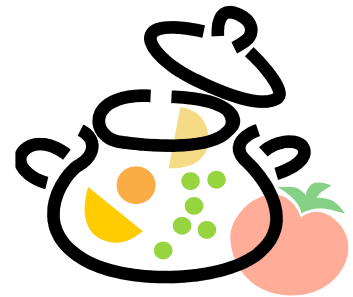
Answer.....

- 13.** Mayur is making vegetable soup.

$\frac{1}{3}$ of the soup is made from carrots

$\frac{1}{2}$ is made from lentils

$\frac{1}{12}$ is made from parsnips



The rest is made from tomatoes.

If he makes 600g of soup in total,

- (i) How much carrot does he need?

Answer..... g

- (ii) How much tomato does he need?

Answer..... g

- 14.** James counts down in 9's starting from 345 until he passes zero. Which will be the last positive number which he counts?

Answer.....

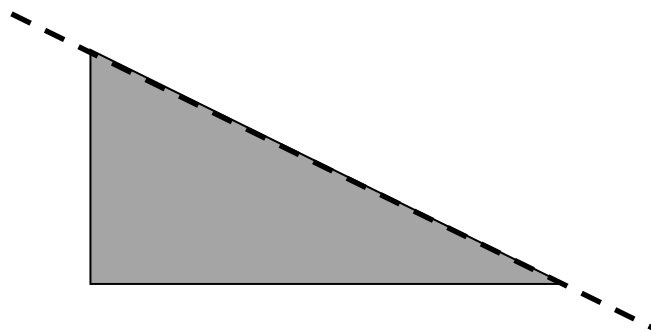
- 15.** A website advertises that, as a special offer, a new mobile phone game will cost 40% less to download next week.

If the game costs 80p this week, how much will it cost next week?



Answer.....

- 16.** The diagram shows part of a shape together with its line of symmetry. Draw in the remainder of the shape.

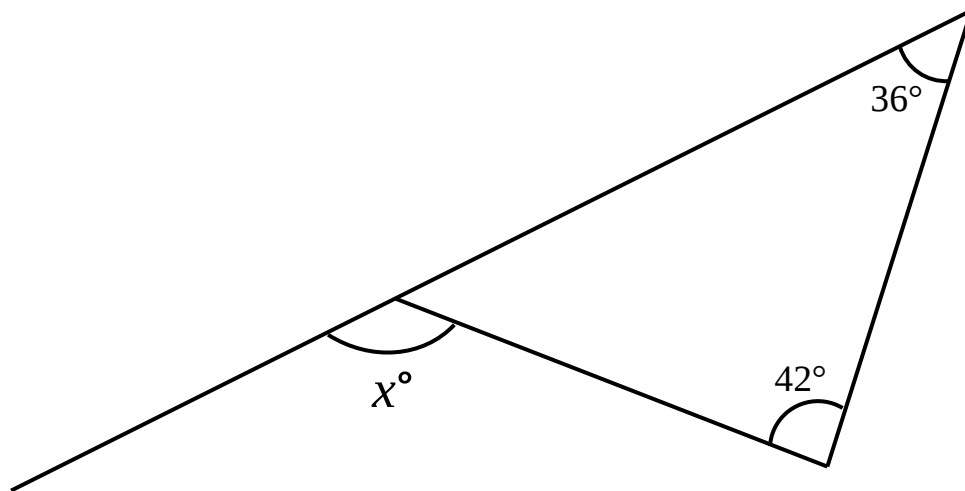


17. 3 x 's balance with 10 y 's.

If one x weighs 1.5g, how much does one y weigh?

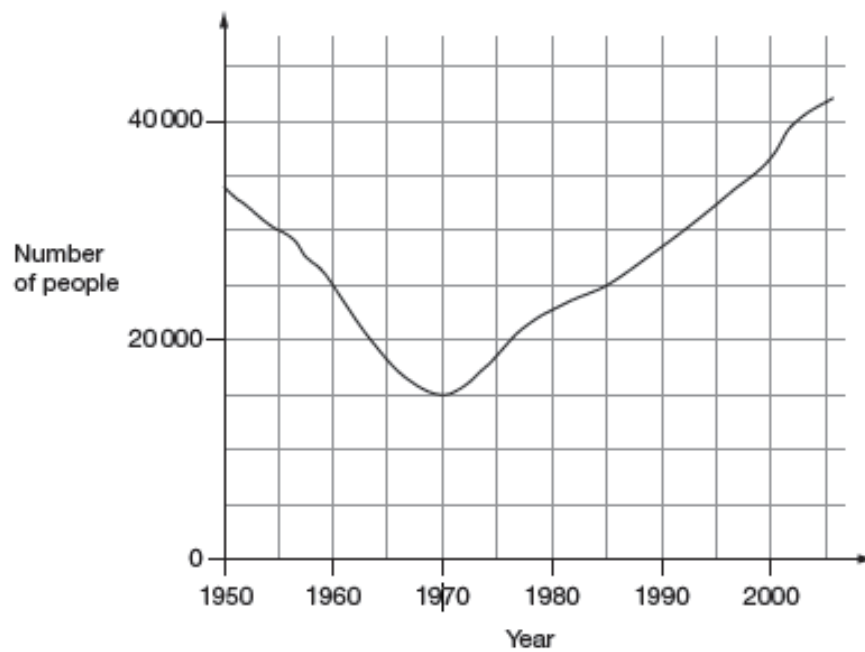
Answer.....

18. Work out the value of the angle labelled x in the diagram below. The diagram is **NOT** drawn to scale.



Answer..... $^\circ$

19.



The graph shows the number of people living in Puddletown from 1950 onwards.

- (i) How many people lived in Puddletown in 1955?

Answer.....

- (ii) In which other year was the number of people the same as in 1960?

Answer.....

- (iii) When did the population first fall below 30 000?

Answer.....

- (iv) On the graph, mark the point at which the population is growing fastest.

20. In a lucky dip there are 10 envelopes.

6 envelopes contain a note saying “Better luck next time!”

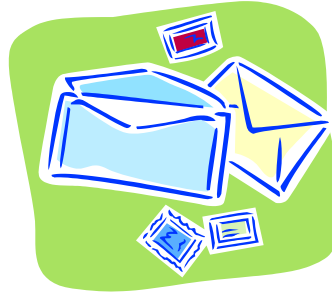
The other 4 envelopes contain prizes:

One contains £1

One contains £2

One contains £5

One contains £10



- (i) Nina pulls one envelope from the lucky dip.
What is the probability that she has won a prize?

Answer.....

- (ii) Find the mean average of £1, £2, £5 and £10.

Answer £.....

- 21.** Jack has thought of two numbers.
When he multiplies them together he gets 96.
When he takes one number away from the other, he gets 4.

What are the two numbers?

Answer.....

- 22.** A farmer wants to put a fence along one edge of his field, which is 480m long. Every 4m, a post is needed to hold the rails up.



How many posts does he need?

Answer.....

23.

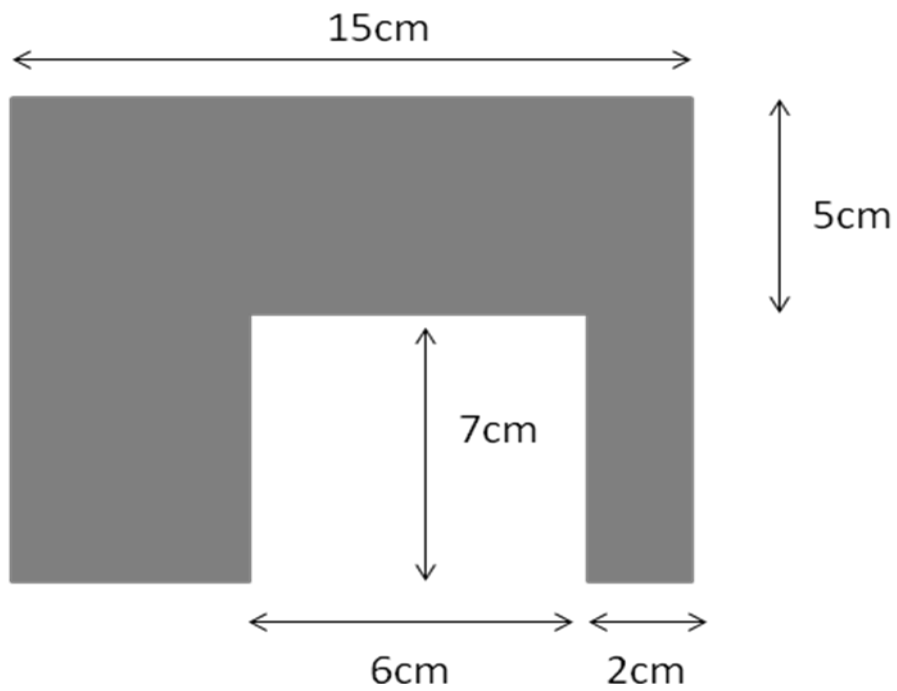


Diagram NOT to scale

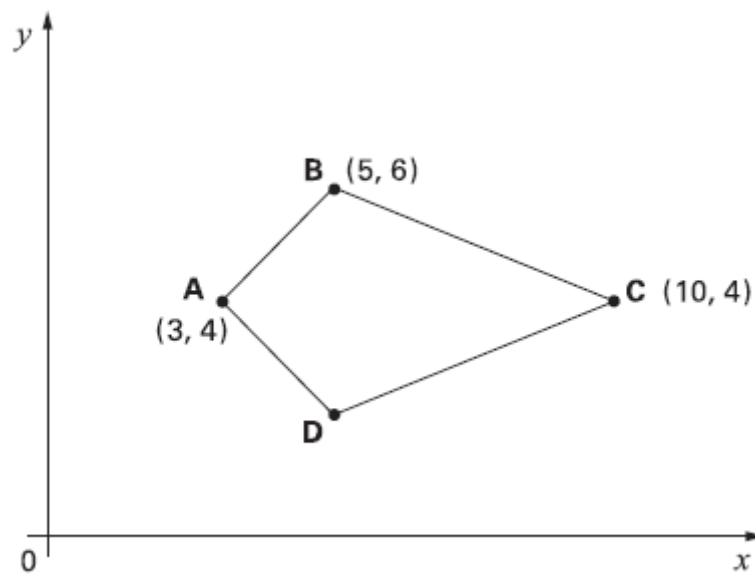
- (i) Find the perimeter of the shape above.

Answer..... cm

- (ii) Find its area.

Answer..... cm²

24.



ABCD is a kite.

Write down the coordinates of vertex D.

Answer.....

25. How many minutes are there from 11:11 until 23:23 on the same day?



Answer..... minutes

- 26.** In Matt's pocket there are 8 watermelon jellybeans, 4 vanilla jellybeans and 4 butter popcorn jellybeans. What is the smallest number of jellybeans that he must take out of his pocket to be certain that he takes at least one of each flavour?

Answer.....

END OF EXAMINATION