Key Stage 3 2006

# MATHEMATICS

## Modified large print

## Tier 3-5 Paper 1

**CALCULATOR NOT ALLOWED**

**Please read this page and pages 2 and 3. Do not look at the rest of the test paper until your teacher tells you to start.**

**Write your name and the name of your school in the spaces below.**

**First name** _____

**Last name** _____

**School** _____

**Total Marks** ☐

**Note to markers:**
**This paper should be marked using the MODIFIED LARGE PRINT mark scheme amendments.**

**REMEMBER**

**The test is 1 hour long plus your additional time allowance.**

**You MUST NOT use a calculator for any question in this test.**

**You will need: pen, pencil, rubber, ruler, tracing paper and mirror (optional).**

**This test starts with easier questions.**

**Try to answer all the questions.**

**Write all your answers and working on the test paper –
do not use any rough paper. Marks may be awarded for working.**

**Check your work carefully.**

**Ask your teacher if you are not sure what to do.**

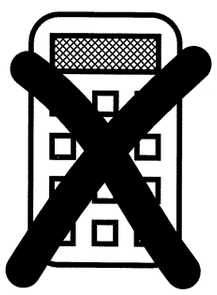
# INSTRUCTIONS

## Answers



**This means write down your answer or show your working and write down your answer.**

## Calculators



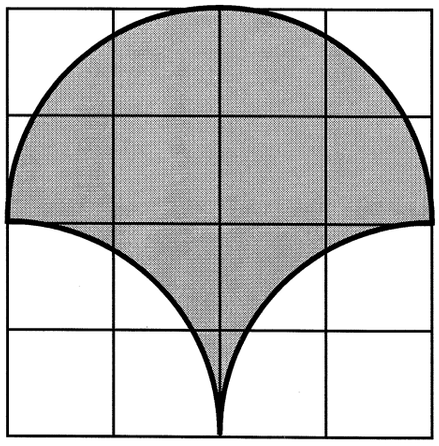
**You MUST NOT use a calculator to answer any question in this test.**

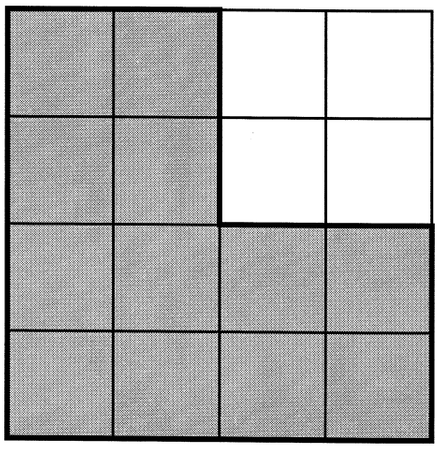
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1. **The shapes below are drawn on square grids.**

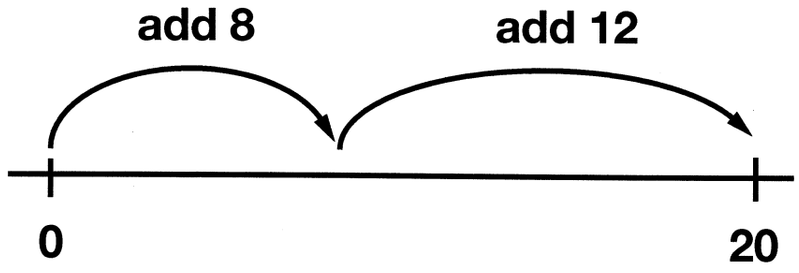
**Each shape has one line of symmetry.**

**Draw the line of symmetry on each shape.**

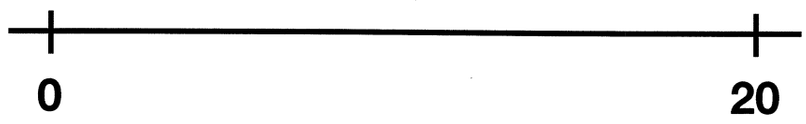




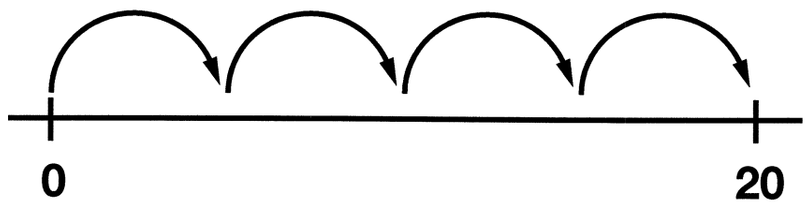
2. **This number line shows one way to use two steps to move from 0 to 20**




(a) **On the number line below, show a different way to use two steps to move from 0 to 20**



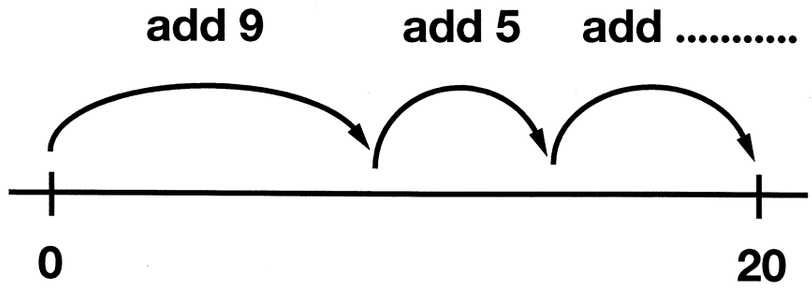

(b) **This number line shows how to use four steps of the same size to move from 0 to 20**

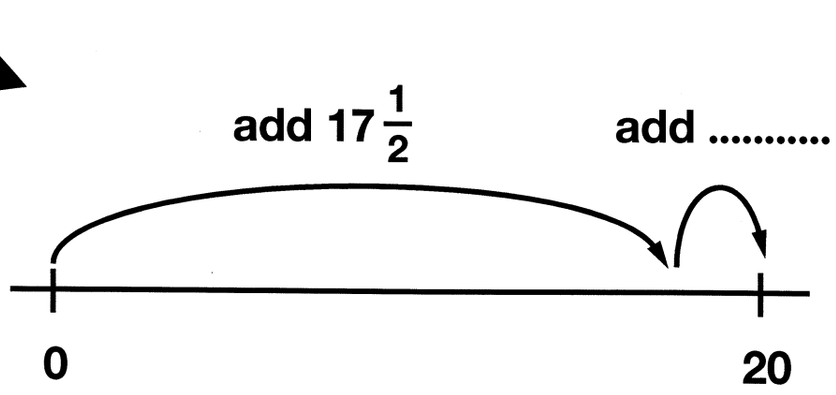


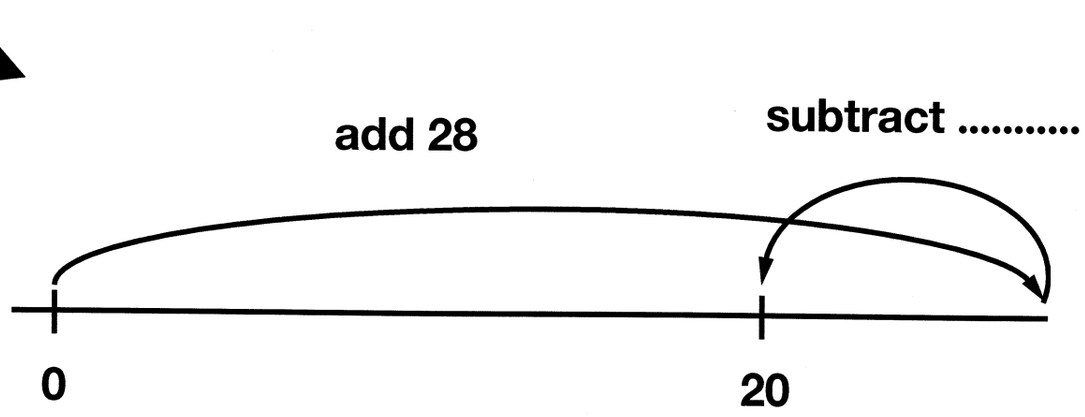

**Complete the sentence below.**

**Each step is add _____**

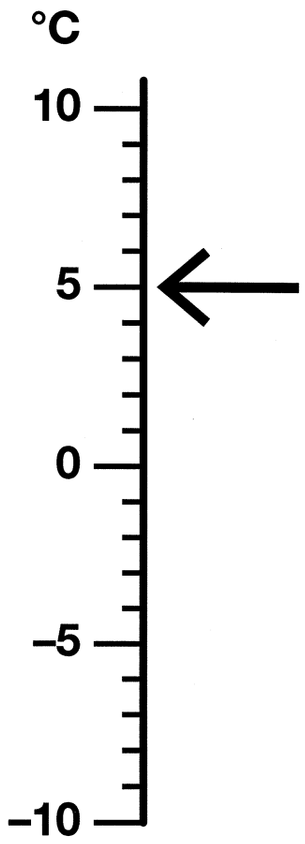
(c) **Write the missing number on each number line to show how to move from 0 to 20**



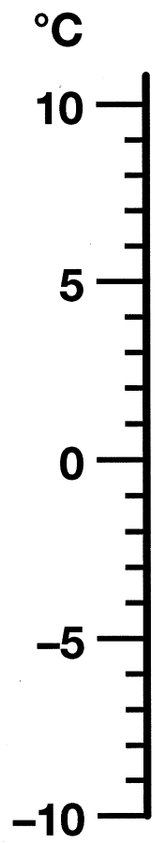



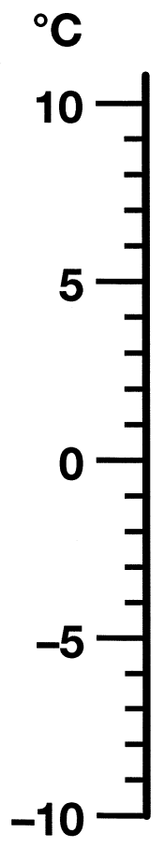
**3.** **The arrow on this diagram marks 5°C**



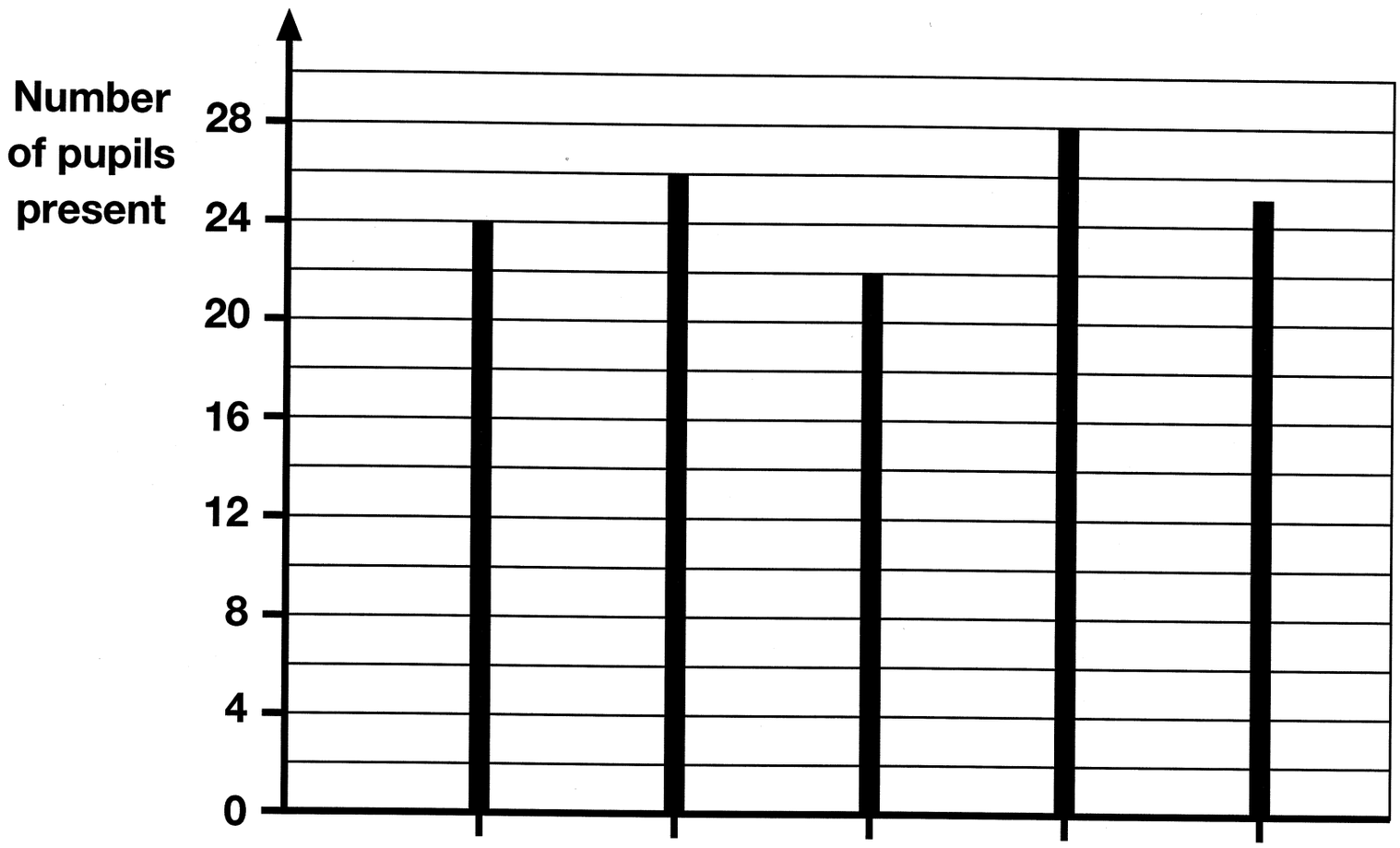

**(a)** **On this diagram mark 8°C**



**(b) On this diagram mark –2°C**

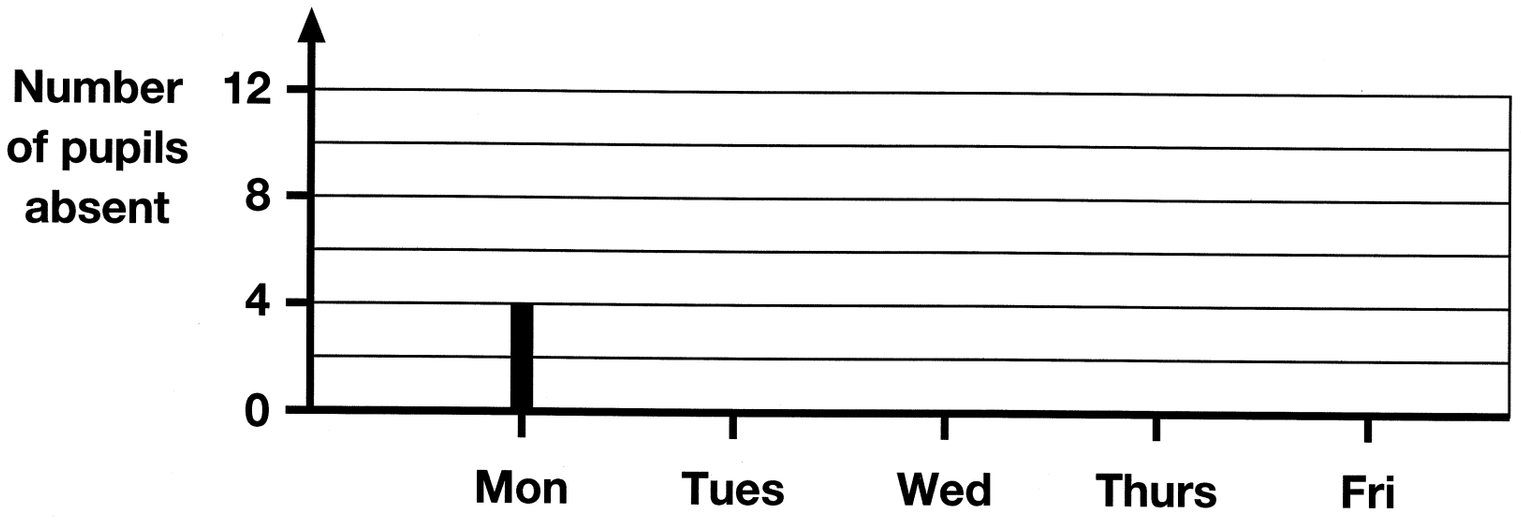


4. There are 28 pupils in class 9K.
This chart shows the number of pupils present each day, in class 9K.




Four pupils were absent on Monday.

Complete the chart below to show the number of pupils absent each day, in class 9K.



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**TURN OVER FOR THE NEXT QUESTION**

5. **A shop sells three different sized bottles of lemonade.**

**The cost of a 1 litre bottle is 39p**

**The cost of a $1\frac{1}{2}$ litre bottle is 55p**

**The cost of a 2 litre bottle is 70p**

(a) **I want 3 litres of lemonade.**

**I could buy three bottles of size 1 litre.**

**How much would that cost?**



£ _____

(b) **Write a different way I could buy exactly 3 litres of lemonade.**



_____

**Now work out how much it would cost.**



£ _____

(c) **Write another different way I could buy exactly 3 litres of lemonade.**



_____

**Now work out how much it would cost.**



£ _____

(d) **My friend buys seven bottles of lemonade.**

**Two of the bottles are of size $1\frac{1}{2}$ litres.**

**Five of the bottles are of size 2 litres.**

**How many litres is that altogether?**



_____ **litres**

6. (a) **Work out**



**37 + 46 = _____**

**37 × 5 = _____**

(b) **What number do you need to add to 63 to make 100?**



_____

(c) **What number do you need to subtract from 100 to make 38?**



_____

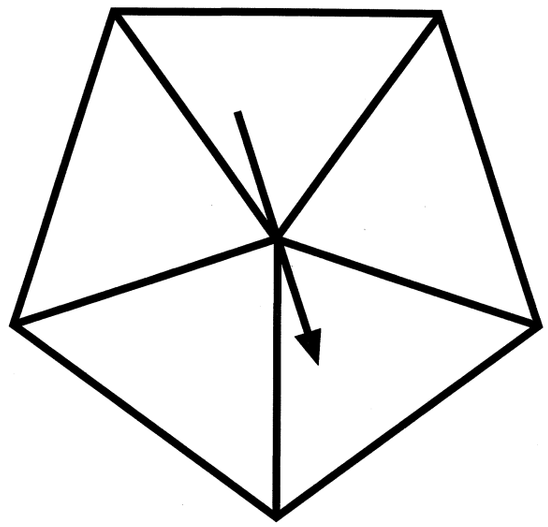
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**TURN OVER FOR THE NEXT QUESTION**

7. **On each spinner write five numbers to make the statements correct.**

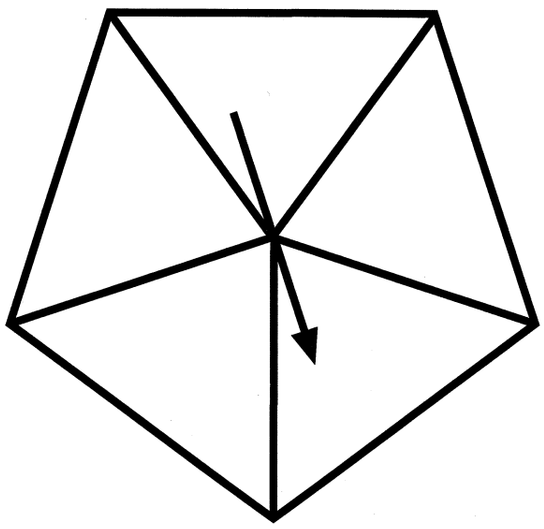
**On spinner A it is certain that you will get a number less than 6**

**Spinner A**



**On spinner B it is more likely that you will get an even number than an odd number.**

**Spinner B**



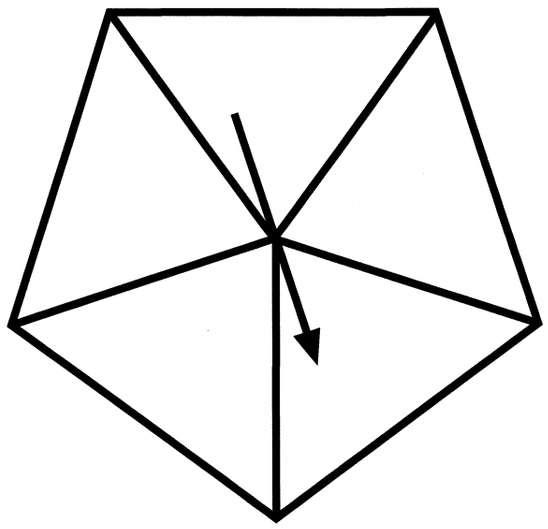


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**On spinner C it is impossible that you will get a multiple of 3**

**Spinner C**





8. (a) Work out $1\frac{3}{4} + 3$



(b) Work out $-5 + 3$



**9. Work out the missing numbers.**

**In each part, you can use the first line to help you.**

**(a)**

$16 \times 15 = 240$



$16 \times \ldots\ldots\ldots = 480$

**(b)**

$46 \times 44 = 2024$



$46 \times 22 = \ldots\ldots\ldots$

**(c)**

$600 \div 24 = 25$



$600 \div \ldots\ldots\ldots = 50$

10. **Red Kites are large birds that were very rare in England.**

**Scientists set free some Red Kites in 1989 and hoped they would build nests.**

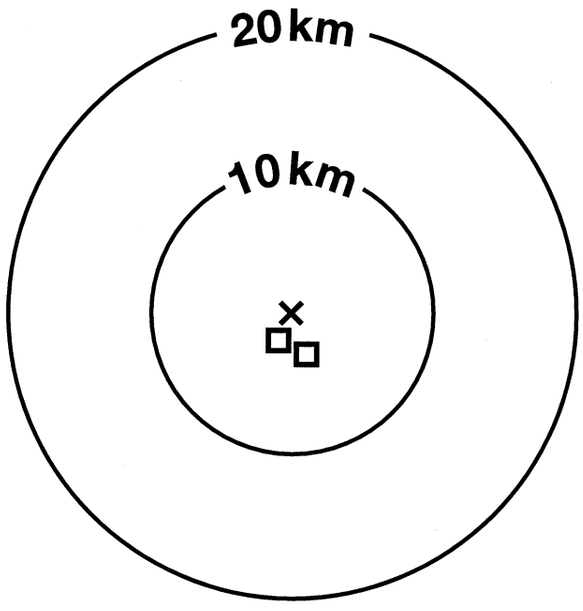
**The diagrams below show how many nests the birds built in 1991, 1993 and 1995.**

**Key:**

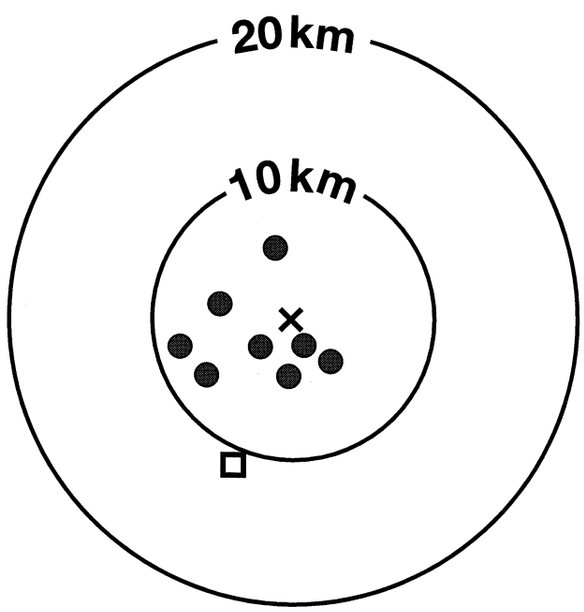
× **shows where the birds were set free.**

□ **represents a nest without eggs.**

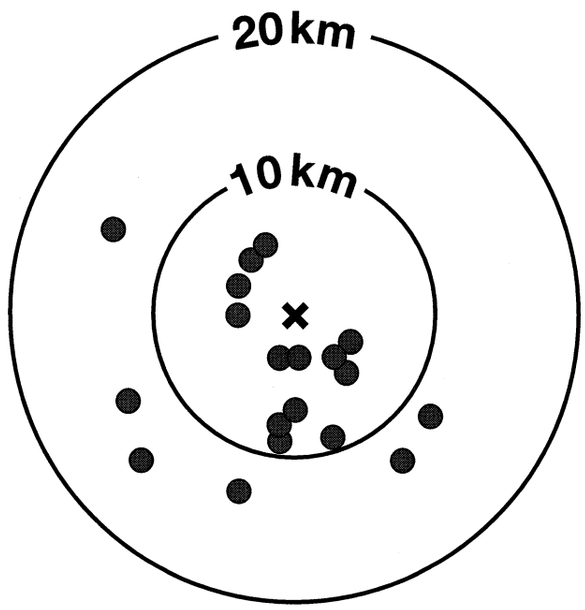
● **represents a nest with eggs.**




**1991**




**1993**




**1995**

**Use the diagrams to answer these questions.**

**(a) Which was the first year there were nests with eggs?**



_____

**(b) In 1993, how many nests were there without eggs?**



_____

**(c) In 1995, how many nests were more than 10 km from where the birds were set free?**



_____

**(d) Explain what happened to the number of nests, over the years.**



**(e) Now explain what happened to the distances of the nests from where the birds were set free, over the years.**



**11. (a) Add together 1740 and 282**



_____

**(b) Now add together 17.4 and 2.82**

**You can use part (a) to help you.**



_____

**(c) 3.5 + 2.35 is bigger than 3.3 + 2.1**

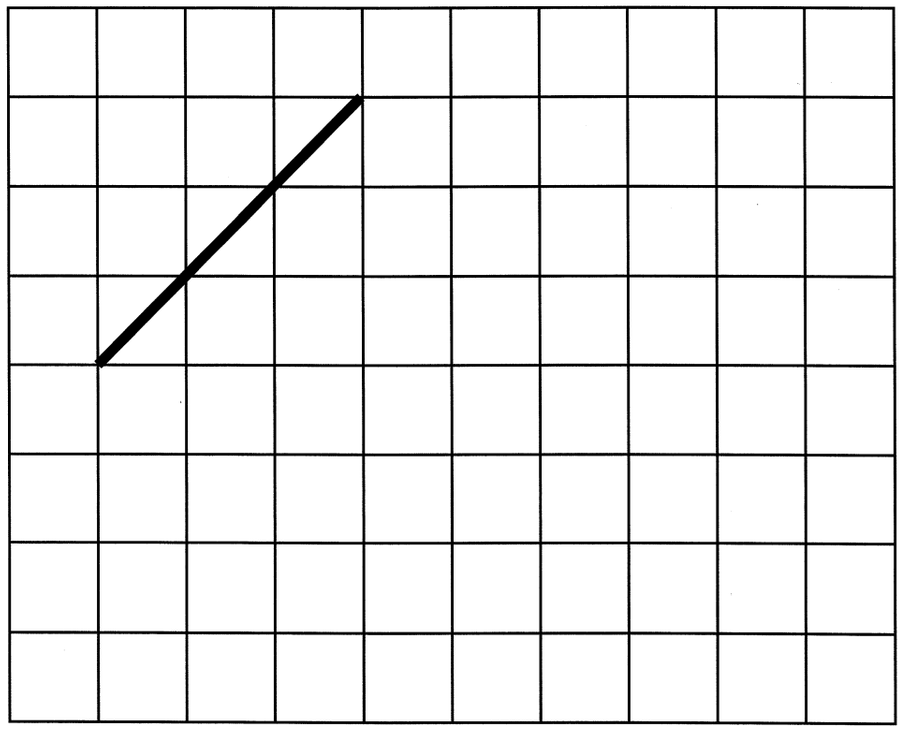
**How much bigger?**



_____

12. (a) **The line on the square grid below is one side of a square.**

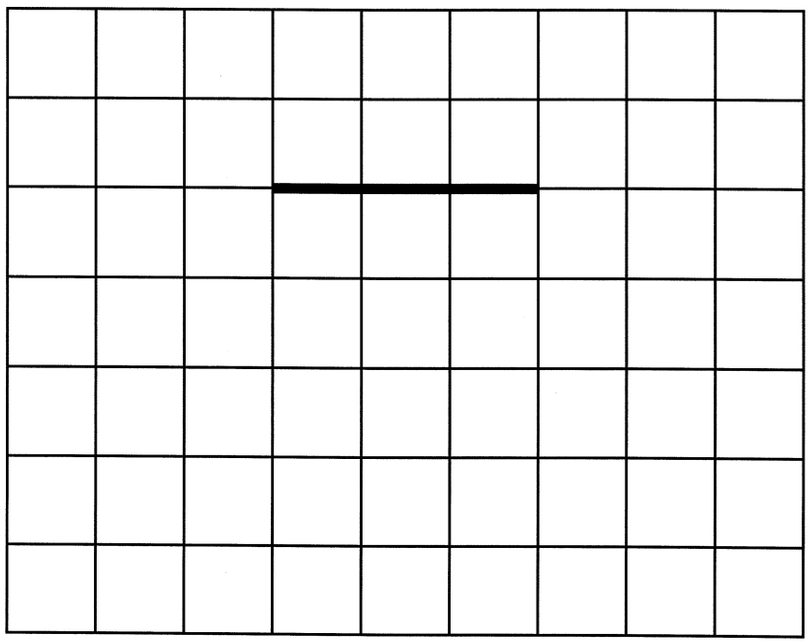
**Draw 3 more lines to complete the square.**



(b) **The line on the square grid below is one side of a quadrilateral.**

**The quadrilateral has only one pair of parallel sides.**

**Draw 3 more lines to show what the quadrilateral could be.**



**13. (a) Show that 9 × 28 is 252**

**(b) What is 27 × 28?**

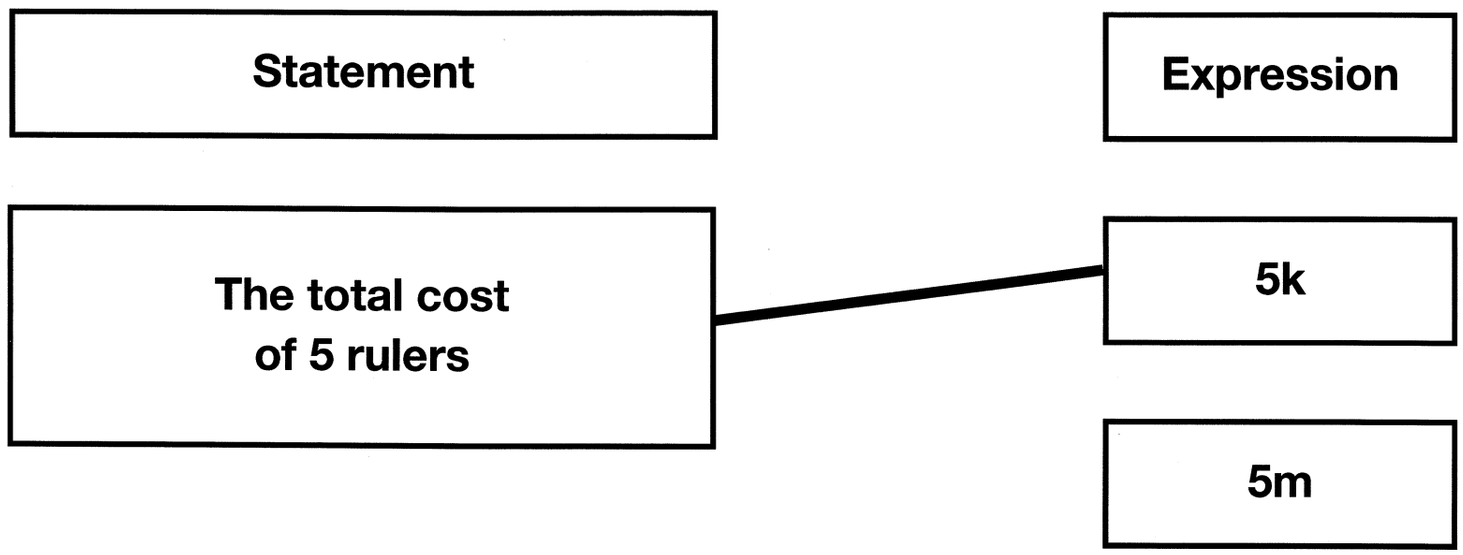
**You can use part (a) to help you.**

**14.** **A ruler costs k pence.**

**A pen costs m pence.**

**Match each statement with the correct expression for the amount in pence.**

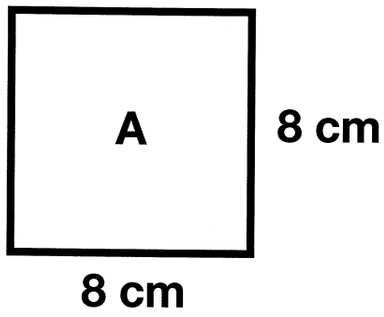
**The first one is done for you.**



15. (a) I have a square piece of paper.
Each side of the square is 8 cm.

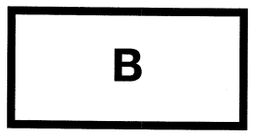
This diagram shows the square labelled A.

Square A




I fold square A in half to make rectangle B.

Rectangle B




Then I fold rectangle B in half to make square C.

Square C

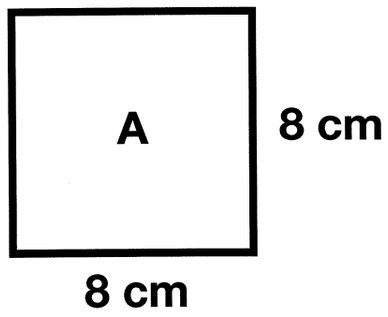



Complete the table below to show the area and perimeter of each shape.

| | Area | Perimeter |
|---|---|---|
| Square A | $cm^2$ | cm |
| Rectangle B | $cm^2$ | cm |
| Square C | $cm^2$ | cm |

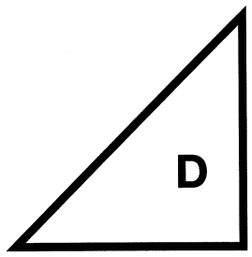
(b) I start again with square A.

Square A




Then I fold it in half to make triangle D.

Triangle D




What is the area of triangle D?



_____ $cm^2$

(c) One of the statements below is true for the perimeter of triangle D.

Tick (✓) the correct one.

The perimeter is less than 24 cm. ☐

The perimeter is 24 cm. ☐

The perimeter is greater than 24 cm. ☐

Explain your answer.

16. (a) **Work out the missing values.**

| |
|---|
| 10% of 84 = ..... |
| 5% of 84 = ..... |
| $2\frac{1}{2}$% of 84 = ..... |

(b) **The cost of a CD player is £84 plus $17\frac{1}{2}$ % tax.**

**What is the total cost of the CD player?**

**You can use part (a) to help you.**

£ _____

**17. Solve these equations.**

**(a) $2k + 3 = 11$**



**k =** _____

**(b) $2t + 3 = -11$**



**t =** _____

18. (a) I am thinking of a number.

My number is a multiple of 4

Tick (✓) the true statement below.

My number must be even ☐

My number must be odd ☐

My number could be odd or even ☐

Explain how you know.

(b) I am thinking of a different number.

My number is a factor of 20

Tick (✓) the true statement below.

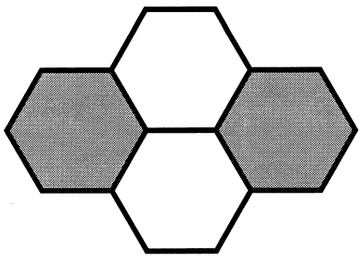
My number must be even ☐

My number must be odd ☐

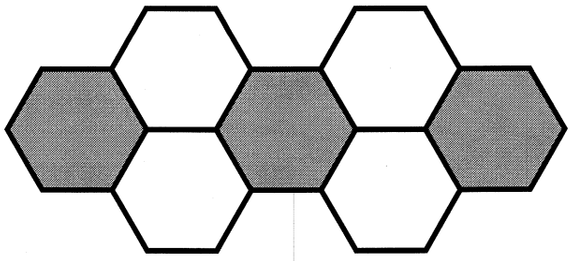
My number could be odd or even ☐

Explain how you know.

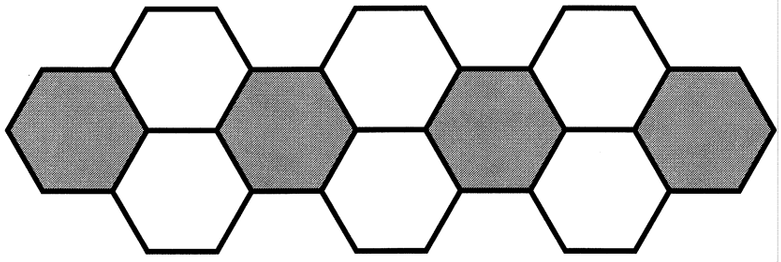
**19. Look at this sequence of patterns made with hexagons.**



**pattern number 1**



**pattern number 2**



**pattern number 3**

**To find the number of hexagons in pattern number n you can use these rules:**

| | |
|---|---|
| **Number of grey hexagons** | **= n + 1** |
| **Number of white hexagons** | **= 2n** |

**Altogether, what is the total number of hexagons in pattern number 20?**



**END OF TEST**

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