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# Maths Revision



# Number and Place Value

## Counting

Count forwards and backwards in 4, 6, 7, 8, 9, 25, 50, steps of powers of 10 (10, 100, 1000, ... )

1. Continue the sequences:

7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77\_

625, 600, 575, 550, 525, 500, 475, 450, 425, 400

57 382, 67 382, 77 382, 87 382, 97 382, 107 382, 117 382

2. Find 10, 100 or 1000 more or less than a given number

What is 100 less than 1902?      What is 1000 more than 3249?

1802

4249

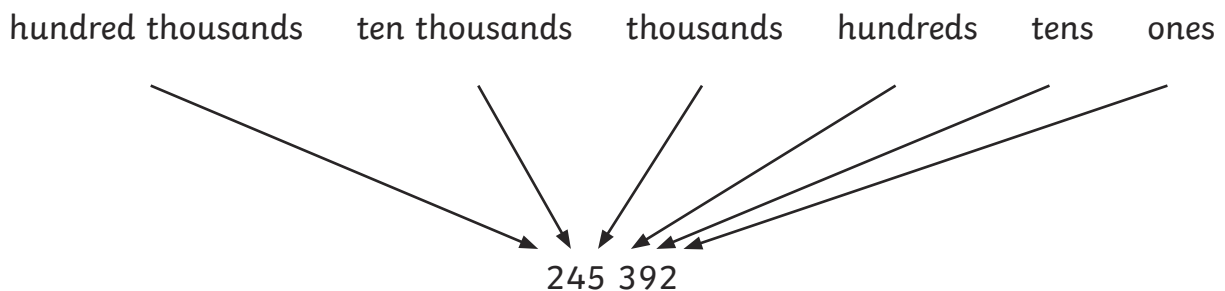
3. Count forwards and backwards through zero

Continue the sequence:

6, 5, 4, 3, 2, 1, 0, -1, -2, -3 -4, -5, -6, -7, -8.

## Place Value

Recognise the place value of each digit in up to four-digit numbers



4. Underline the thousands digit in 2769.

Underline the hundred thousands digit in 347 053.

Underline the tens digit in 209 740.

## Compare and Order Numbers

Compare using  $<$ ,  $>$  or  $=$

5. Write a number so that each sentence makes sense:

141 141  $>$  \_\_\_\_\_ **accept answers less than 141 141**

144 114  $=$  \_\_\_\_\_ **accept only 144 114**

501 243  $<$  \_\_\_\_\_ **accept answers more than 501 243**

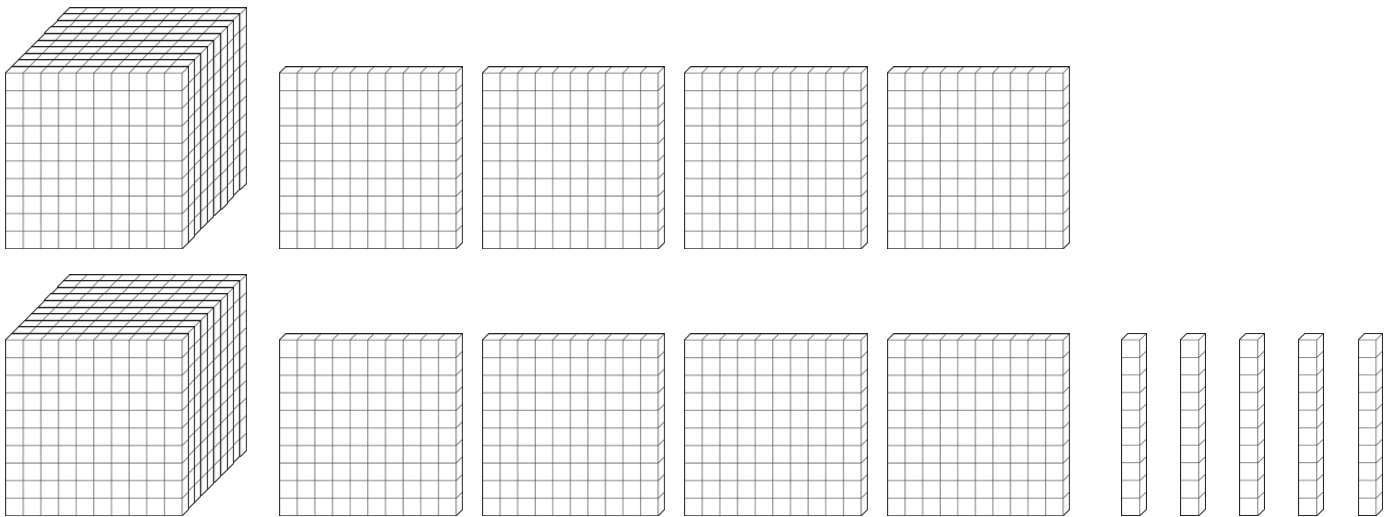
6. Order the following numbers from largest to smallest:

Smallest      **11 112**      **11 211**      **121 211**      **122 121**      **122 211**      Greatest

## Identify, Represent and Estimate

Use models and representations of numbers

7. What number is shown? **2850**



## Rounding

Round numbers to the nearest 10, 100, 1000, 10 000 or 100 000

8. 4500 rounded to the nearest 1000 is **5000**

253 450 to the nearest 10 000 is **250 000**

## Read and Write Numbers in Numerals and Words

9. Complete the table:

Numerals	Words
344 285	Three hundred and forty-four thousand, two hundred and eighty-five
855 102	Eight hundred and fifty-five thousand, one hundred and two
622 916	six hundred and twenty-two thousand, nine hundred and sixteen
120 563	One hundred and twenty thousand, five hundred and sixty-three

## Roman Numerals

10. Use the following Roman numerals to represent numbers to 100:

Roman	Numeral
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

CCXIX = 219

DCXXVI = 626

CMXLVIII = 948

MDCCCLXXI = 1871

## Solve Problems

11. Here are 3 years written in Roman Numerals. Order the years from earliest to latest:

MCMXCIX  
(1999)

MMIX  
(2009)

MMXV  
(2015)

# Addition and Subtraction

## Add and Subtract Mentally

12. Add and subtract three-digit numbers and ones, tens and hundreds

$376 + 3 = 379$

$376 + 40 = 416$

$376 + 200 = 576$

## Mental Methods

13. Add and subtract numbers mentally with larger numbers

$15\,672 - 3200 = 12\,472$

## Formal Methods

14. Use a formal written method to calculate:

$$\begin{array}{r} 72698 \\ + 61562 \\ \hline 134260 \\ \hline \end{array}$$

$$\begin{array}{r} 84935 \\ - 12423 \\ \hline 72512 \\ \hline \end{array}$$

$$\begin{array}{r} \overset{5}{\cancel{10}} \overset{1}{4} \overset{7}{\cancel{8}} \overset{10}{\cancel{1}} \overset{1}{2} \\ - 29364 \\ \hline 35448 \\ \hline \end{array}$$

## Estimate and Inverse

15. Estimate by rounding to check accuracy.

Use the inverse to check the following calculations. Circle 'correct' or 'incorrect.'

$$6470 + 1248 = 7718$$

correct/incorrect

$$5905 - 2674 = 2231$$

correct/incorrect

## Solve Problems

### Multi-step problems

16. 8451 people visit a cinema on one day. There are two films showing. 3549 adults and 946 children see an adventure film, 1263 adults and a number of children see an animation.

How many adults are there? **4812**

How many children are there? **3639**

How many children see the animation? **2693**

How many more children see the animation than the adventure film? **1747**

# Multiplication and Division

## Multiplication Tables

17. Fill in the missing numbers:

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

## Multiplying and Dividing

18. Use knowledge of place value and related facts to solve these calculations:

$$400 \times 5 = 2000 \quad 630 \div 7 = 90$$

Multiply by 0 and 1 and divide by 1:

$$285 \times 1 = 285 \quad 285 \times 0 = 0 \quad , 285 \div 1 = 285$$

Multiplying and dividing whole numbers and decimals by 10, 100 and 1000:

$$45 \times 10 = 450 \quad 6.7 \times 100 = 670 \quad 902 \times 1000 = 902\,000$$

$$59 \div 10 = 5.9 \quad 4506 \div 100 = 45.06 \quad 382 \div 1000 = 0.382$$



## Factor Pairs and Commutativity

19. What are all the factor pairs of 56? **1 and 56, 2 and 28, 4 and 14, 8 and 7**

Use your factor pairs to solve:

56 pencils are shared between 4 tables. How many pencils does each table receive?

**14**

20. Change the order of the numbers in these calculation without changing the answer:

$$5 \times 9 \times 2 = 90 \quad \mathbf{2 \times 9 \times 5 = 90, \quad 2 \times 5 \times 9 = 90, \quad 9 \times 2 \times 5 = 90, \quad 9 \times 5 \times 2 = 90}$$

$$6 \times 3 \times 10 = 180 \quad \mathbf{6 \times 10 \times 3 = 180, \quad 10 \times 3 \times 6 = 180, \quad 10 \times 6 \times 3 = 180}$$

## Prime Numbers

21. List all the prime numbers up to 20. **2, 3, 5, 7, 11, 13, 17, 19**

List all prime numbers between 20 and 30. **23, 29**

What would be the first prime number after 100? **101**

## Square and Cube Numbers

22. Write these numbers into the correct place in the table:

9, 144, 27, 4, 1, 8, 100, 81, 125, 16, 25, 64, 121

Square Numbers	Cube Numbers
<b>1</b>	<b>1</b>
<b>4</b>	<b>8</b>
<b>9</b>	<b>27</b>
<b>16</b>	<b>64</b>
<b>25</b>	<b>125</b>
<b>64</b>	
<b>81</b>	
<b>100</b>	
<b>121</b>	

## Formal Methods

23. Use formal written methods to multiply:

			2	7
		x		4
		1	0	8
			2	
		3	8	2
	x			7
	2	6	7	4
		5	1	
	2	4	7	1
x				6
1	4	8	2	6
	2	4		

24. a) Use the formal long multiplication method to calculate:

			2	7
		x	1	4
		1	0	8
		2	7	0
		3	7	8

b) Use a short division method to solve these problems:

			1	9				9	7	r	2
4	7	6			5	4	8	7			

25. Fill in the missing numbers to complete the calculations.

$$15 \times 3 = 45 \quad \text{or} \quad 56 \div 4 = 14$$

### Word Problems:

26. A teacher has four new boxes of pencils, each with 12 pencils, and a tray with 37 pencils. The teacher shares equally all the pencils between 5 tables. How many pencils does each table receive? Show your working out below.

$$12 \times 4 = 48 \text{ new pencils.}$$

$$48 + 37 = 85 \text{ pencils in total.}$$

$$85 \div 5 = 17 \text{ pencils per table.}$$

### Scaling Problems with Simple Fractions

27. 12 pizzas are cut into quarters. Into how many pieces of pizza will the pizzas be cut?

$$12 \times 4 = 48 \text{ pieces}$$

### Correspondence problems

28. Jenna has 2 t-shirts and 4 pairs of shorts. How many different combinations of the t-shirts and shorts does Jenna have? **8 different combinations.**

29. 120 pencils are shared equally between 3 classes. How many pencils will they each receive?

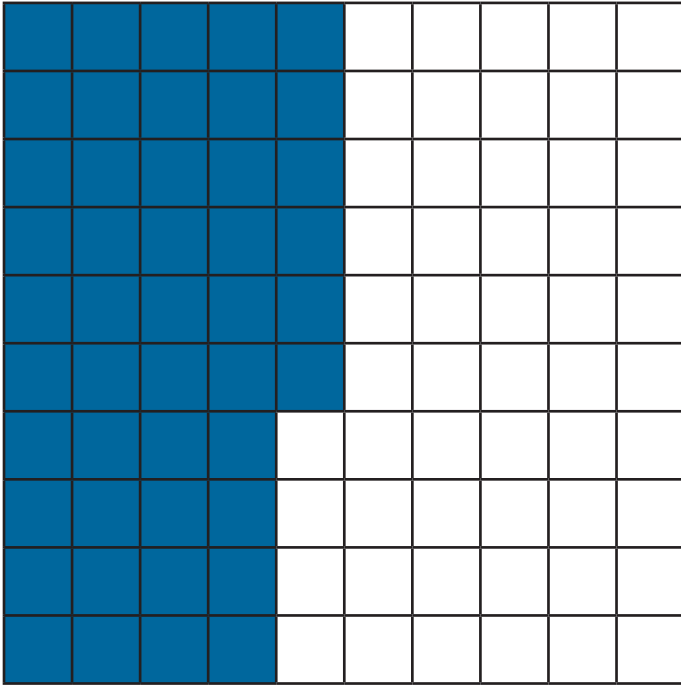
$$120 \div 3 = 40 \text{ pencils each.}$$

# Fractions

30. Shade to show  $\frac{7}{10}$ :



Shade to show  $\frac{46}{100}$ :



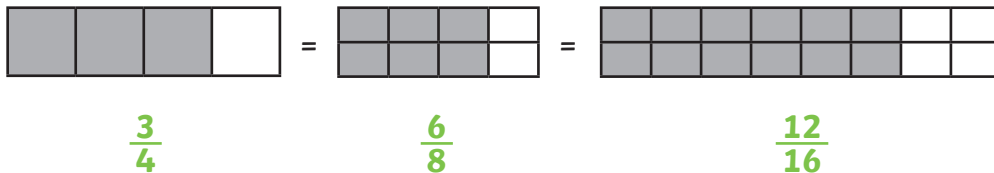
## Equivalent Fractions

31. Find  $\frac{5}{8}$  of these marbles by circling: **Accept 20 marbles circled**



## Fraction of a Set of Marbles

32. Write in the missing fractions



1															
$\frac{1}{2}$								$\frac{1}{2}$							
$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$			
$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$

1															
$\frac{1}{3}$						$\frac{1}{3}$						$\frac{1}{3}$			
$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$			$\frac{1}{6}$			
$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$
$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{24}$

1															
$\frac{1}{5}$				$\frac{1}{5}$				$\frac{1}{5}$				$\frac{1}{5}$			
$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$		$\frac{1}{10}$	
$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$

33. Write 3 fractions that are equivalent to  $\frac{1}{3}$   $\frac{2}{6}$   $\frac{4}{12}$   $\frac{8}{24}$

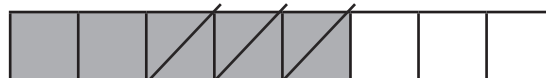
## Add and Subtract Fractions with the Same Denominator and with Denominators that are Multiples

34. Find the missing equivalent fractions.

$$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$$



$$\frac{5}{8} - \frac{3}{8} = \frac{2}{8} = \frac{1}{4}$$



## Compare and Order

Unit fractions

35. a) Order these fractions from smallest to greatest:

smallest       $\frac{1}{8}$        $\frac{1}{6}$        $\frac{1}{4}$        $\frac{1}{3}$       greatest

b) Use < . > or = to compare these fractions:

$$\frac{1}{5} < \frac{3}{5}$$

$$\frac{5}{8} > \frac{1}{4}$$

## Mixed Numbers and Improper Fractions

36. Write the improper fraction:

Mixed fraction  $1\frac{2}{3}$  = - Improper fraction  $\frac{5}{3}$

## Multiply Fractions

37. Complete the missing fractions:

$$\frac{2}{3} \times 5 = \frac{10}{3} = 3\frac{1}{3}$$

## Decimal Equivalents

38. Complete the missing tenths, hundredths and decimals:

$$\frac{7}{10} = 0.7 \quad \frac{43}{100} = 0.43$$

$$\frac{1}{4} = 0.25 \quad \frac{1}{2} = 0.5 \quad \frac{3}{4} = 0.75$$

Write decimals as a fraction:

$$0.67 = \frac{67}{100}$$

## Division by 10 and 100

39.

$$2 \div 10 = 0.2 \quad 2 \div 100 = 0.02 \quad 25 \div 10 = 2.5 \quad 25 \div 100 = 0.25$$

## Rounding Decimals

40. Round these decimals to the nearest whole number:

0.5 rounds to 1

2.35 rounds to 2

**Round this decimal to one decimal place:**

0.05 rounds to 0.1

## Read, Write, Order and Compare Decimals

41. Write the decimal in digits:

zero ones, four tenths and five hundredths. 0.45

two ones, three tenths and four hundredths. 2.34

## Percentages

42. Complete the missing percentages:

$$50\% = \frac{50}{100} = \frac{1}{2} \quad 41\% = \frac{41}{100}$$

## Solve Problems

Fractions

43. Adil divides his marbles into tenths. He wants to give two friends an equal number of marbles but still have 3 times more than their individual amounts. What fractions could he split his marbles into?

$$\frac{2}{10} + \frac{2}{10} + \frac{6}{10}$$

## Measure and Money Problems

44. a) Ellie buys a new shirt for £4.75 and a pair of trousers for £3.50 in a sale. She pays with a £10 note. What change will she receive?

**Ellie will receive £1.75 in change.**

b) A bag of potatoes weigh 2.45kg. How much will 4 bags weigh?

**9.8kg**

## Decimal Problems to 3 Decimal Places

45. A packet of sugar weighs 1.348kg.  $\frac{3}{4}$  kg is used to bake some cakes.

How much will the packet weigh now?

**1.348kg – 0.75kg = 0.598kg**

## Knowing Percentage and Decimal Equivalents

46. Order the following from smallest to largest:

25%, 0.3,  $\frac{2}{5}$

**25%,  $\frac{2}{5}$ , 0.3**



# Measurement

## Estimate, Measure, Compare, Add and Subtract

47.

### Lengths (mm/cm/m)

Measure and draw lines using a ruler in centimetres (cm) or millimetres (mm).

This line is **9.5cm** or **95mm** long.

### Mass (g/kg)

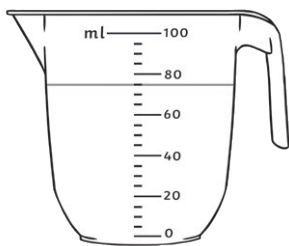
Measure the mass of objects using different scales

48. 3 apples weigh 435g. One is eaten, and the 2 remaining apples weigh 285g. What is the mass of the eaten apple? **150g**

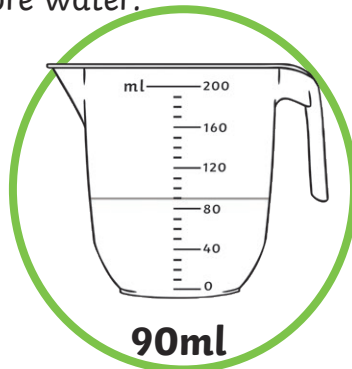
### Capacity (ml/l)

49.

Circle the jug which has more water:



**75ml**



**90ml**

## Convert between units

50.

Complete the missing conversions:

#### Length:

1 km = **1000m**

1m = **100cm** or **1000mm**

1cm = **10mm**

#### Mass:

1kg = **1000g**

#### Capacity/ Volume:

1l = **1000ml**

#### Time:

1 year = **365** days

1 week = **7** days

1 day = **24** hours

1 hour = **60** minutes

1 minute = **60** seconds

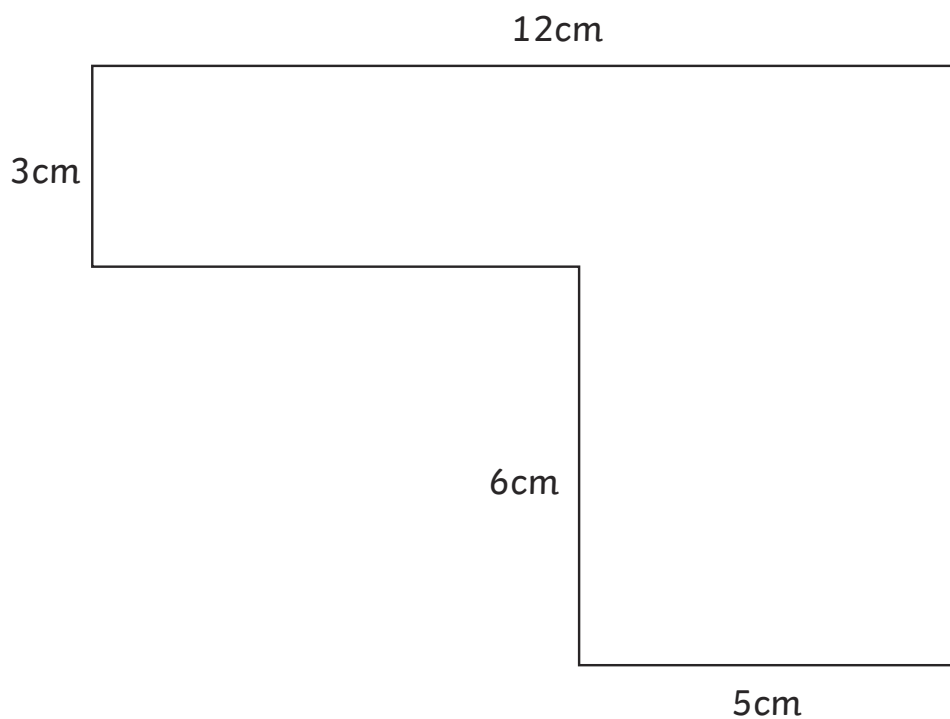
## Perimeter

51. Calculate the perimeter:



**Perimeter = 22cm.**

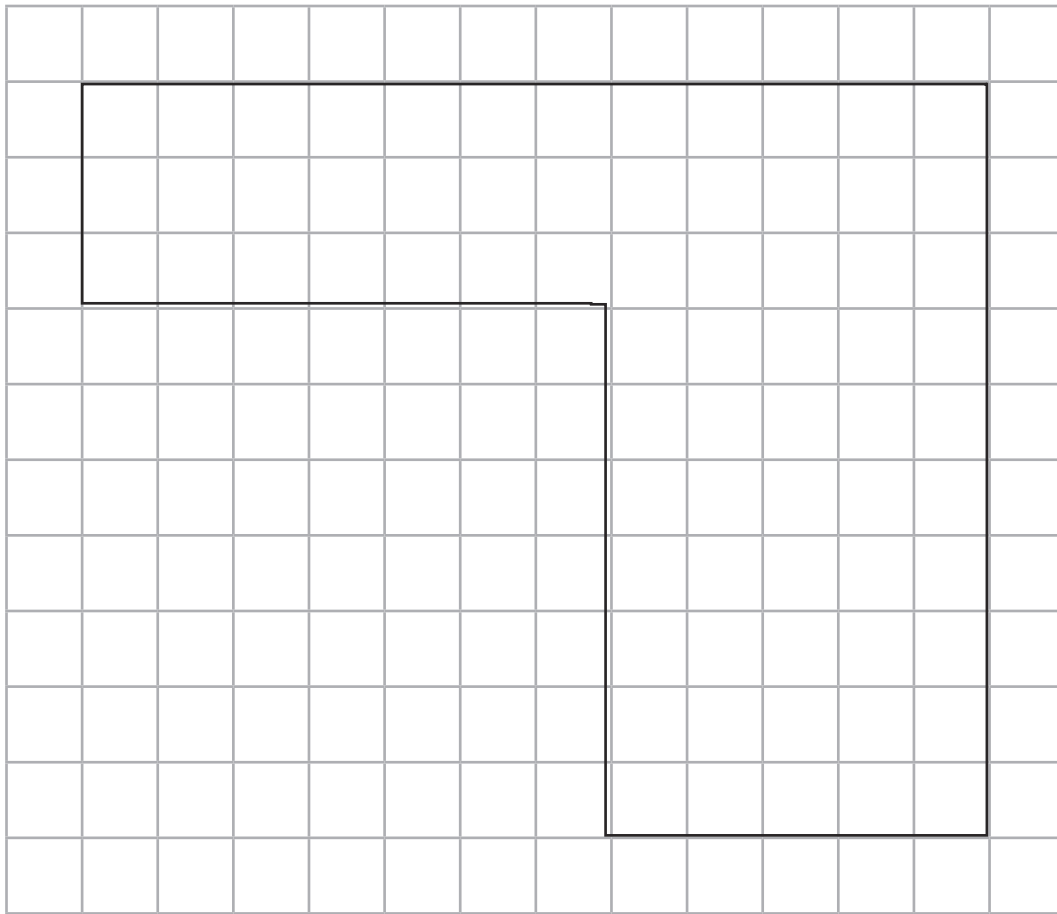
Measure and calculate the perimeter of rectilinear shapes (including squares)



**Perimeter = 42cm.**

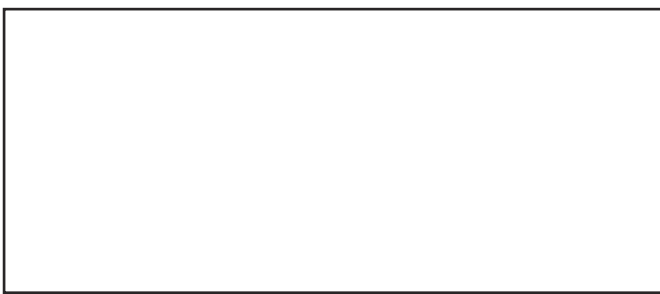
## Area

52. a) Calculate the area of this rectilinear shape by counting squares:



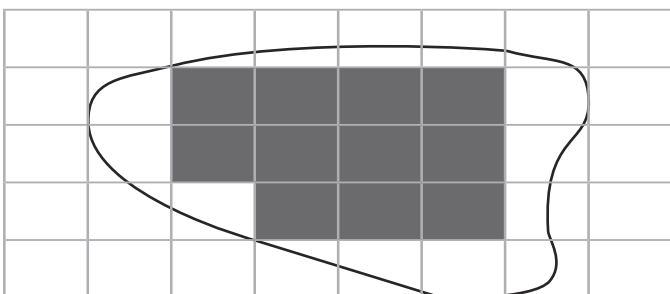
Area = **71cm<sup>2</sup>**

b) Measure the sides of the rectangle and calculate the area:



$$\text{Area} = 8\text{cm} \times 3\text{cm} = 24\text{cm}^2$$

c) Estimate the area of this irregular shape:



Accept answers between  
**17cm<sup>2</sup> and 22cm<sup>2</sup>**

## Money

53. Add and subtract giving change

Jude buys a bag of apples for £2.25 and some avocados for £3.15. How much change will he get from £20?

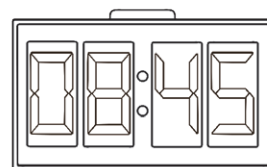
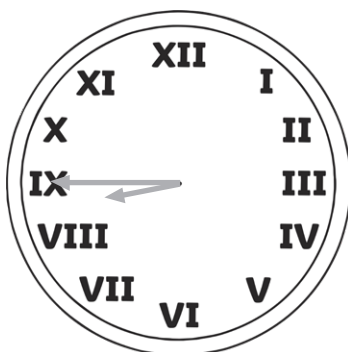
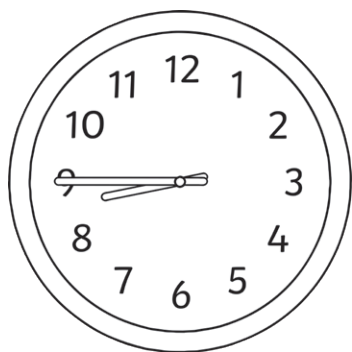
$$£2.25 + £3.15 = £5.40$$

$$£20 - £5.40 = \text{£14.60}$$

## Time

54. Analogue clocks and 12/24 hour time

a) What time do these clocks show? **Quarter to 9, 08:45, or eight forty-five**



b) The maths lesson lasted 1 hour and 5 minutes. The art lesson was one hour and twenty minutes. Which lesson was longer and by how long? **The art lesson was longer by 15 minutes**

c) A film lasts 136 minutes. How long is the film in hours and minutes?

**2 hours and 16 minutes**

## Solve Problems

55. a) 2 equal bottles of water contain 500ml of drink. How many litres will 7 bottles hold?

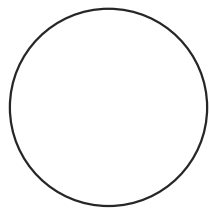
**1.75** litres of water.

b) A 6.5kg bag of soil is divided into 20 pots equally. Each pot needs 0.5kg. How much more soil does each pot need after the bag is used up?

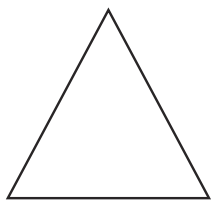
**175g** more soil is needed in each pot.

## 2D Shapes

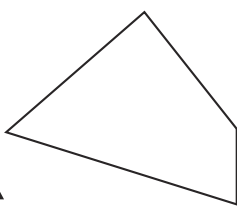
56. Label the shapes.



circle



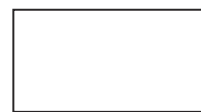
triangle



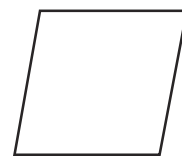
quadrilateral



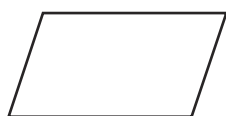
square



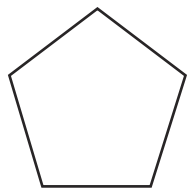
rectangle



rhombus



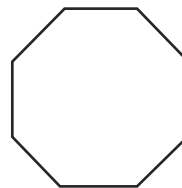
parallelogram



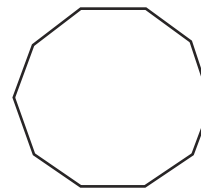
pentagon



hexagon

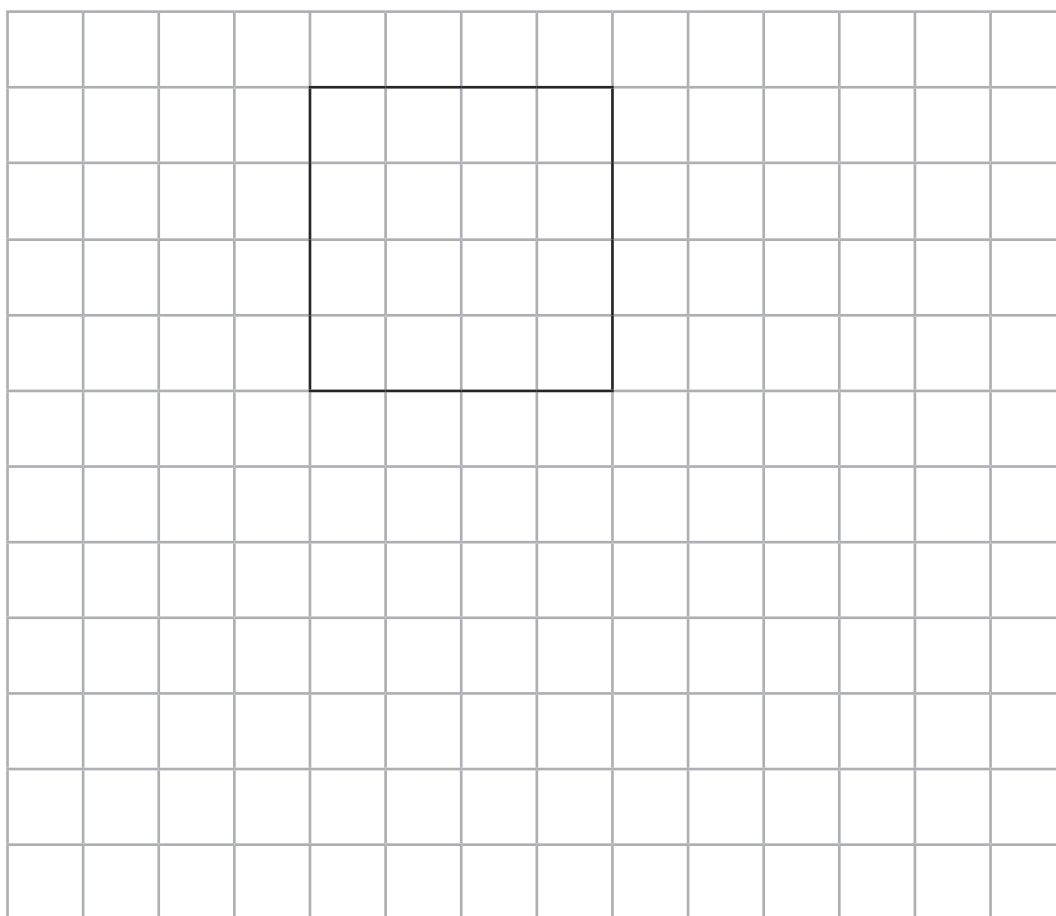


octagon

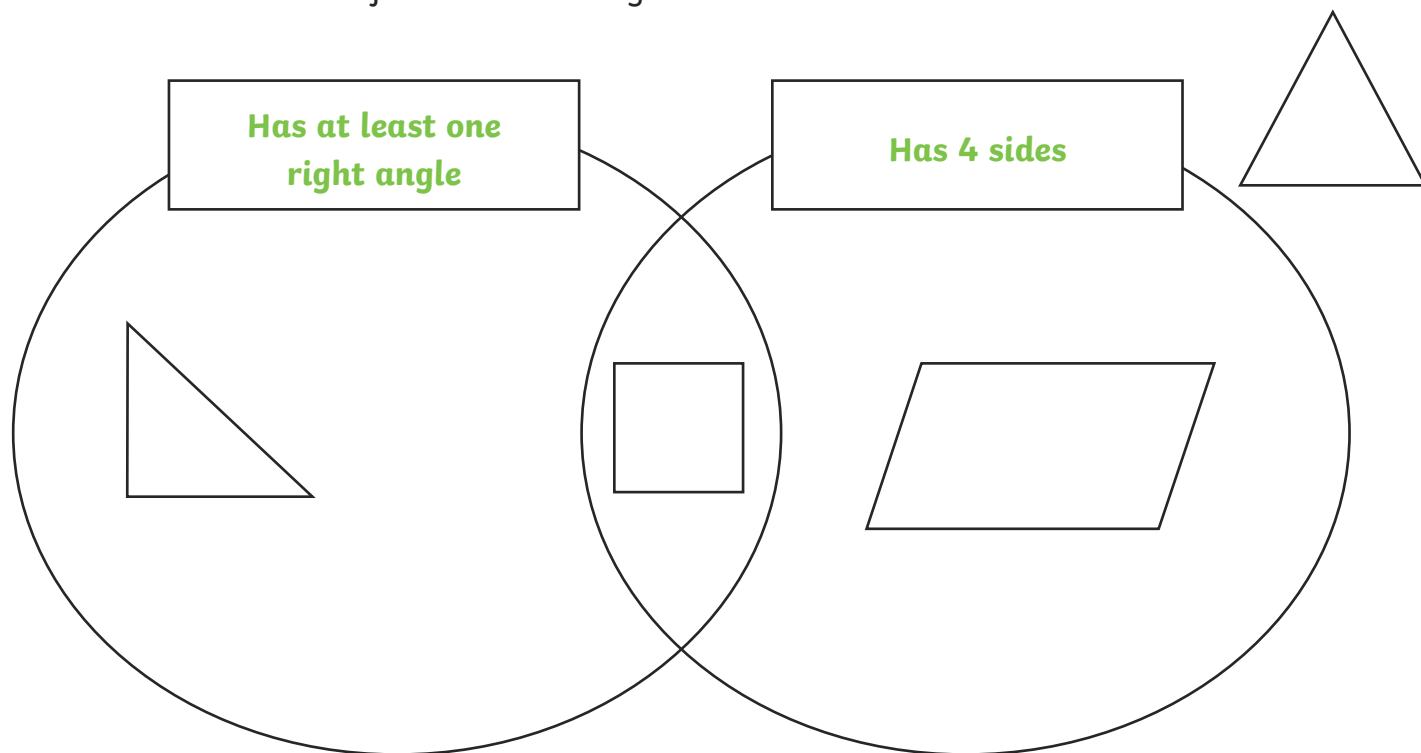


decagon

57. Draw a square on 1cm squared paper with sides of 4cm.



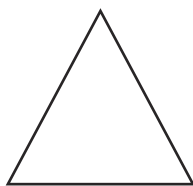
58. Write suitable titles for this Venn diagram:



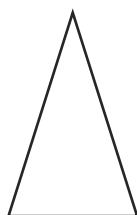
## Triangles

59. Label the triangles.

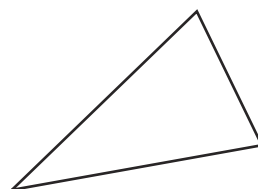
**Equilateral** (all sides and angles equal)



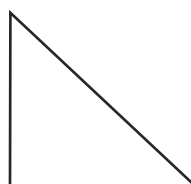
**Isosceles** (2 sides and angles equal)



**Scalene** (no sides and angles equal)

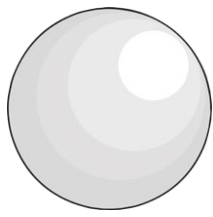


**Right-angled triangle** (no sides and angles equal)

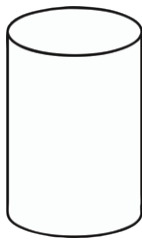


## 3D Shapes

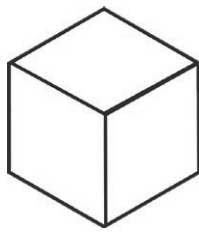
60. Label the shapes:



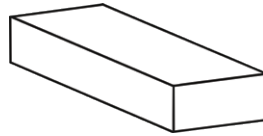
sphere



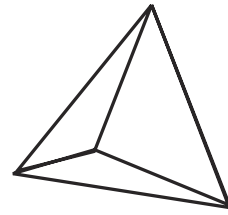
cylinder



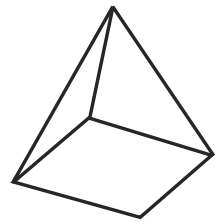
cube



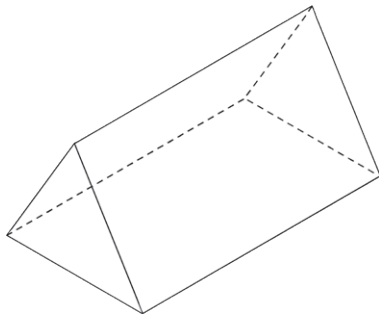
cuboid



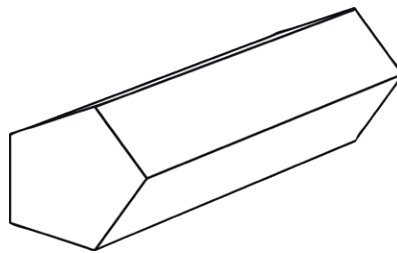
tetrahedron



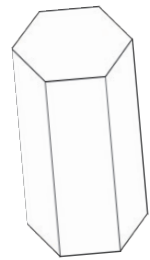
square-based pyramid



triangular prism



pentagonal prism



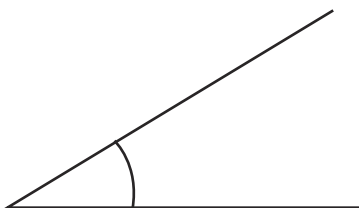
hexagonal prism

Recognise 2D representations and make models from modelling materials

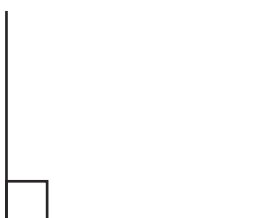
## Angles

61. Complete the statements:

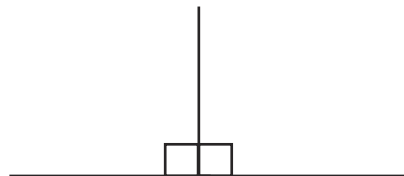
An **angle** measures a turn.



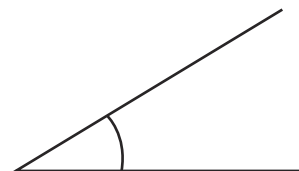
A **right angle** is the corner of a square.



**2** right angles make a straight line.



An **acute** angle is less than a right angle ( $90^\circ$ ).

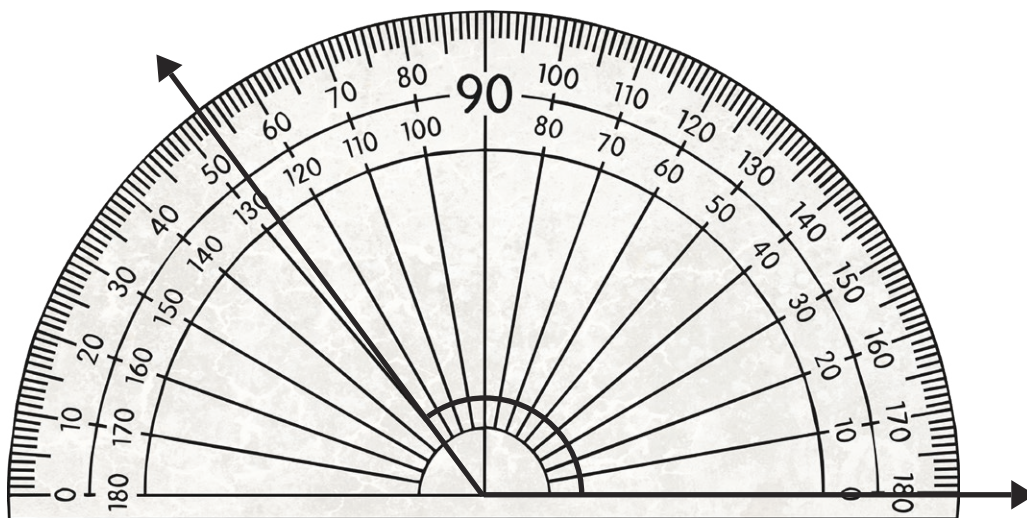


An **obtuse** angle is between a right angle and a straight line.



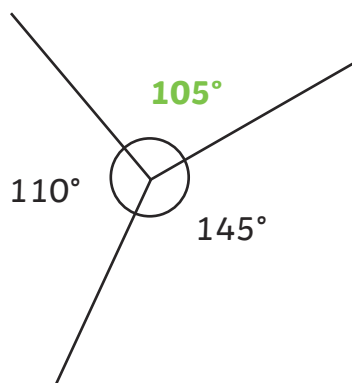
## Draw and Measure Angles

62. a) Measure the angle:

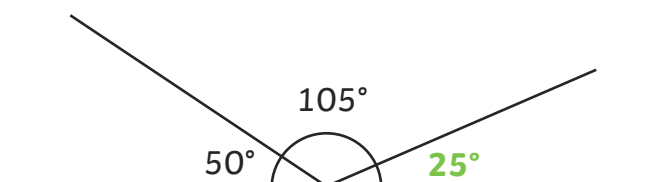


The angle measures **127°**

b) Calculate the missing angles:



c)

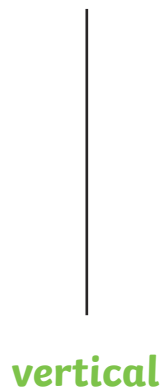


One right angle = **90°** Two right angles = **180°** Three right angles = **270°**

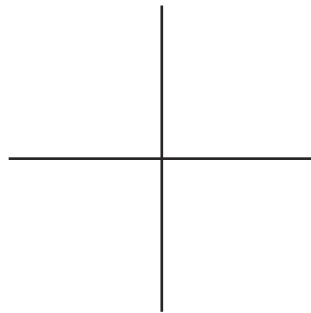


## Lines

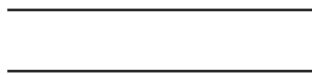
63. Label the lines using the word bank:



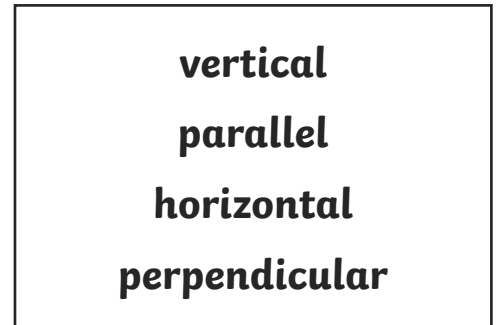
horizontal



perpendicular

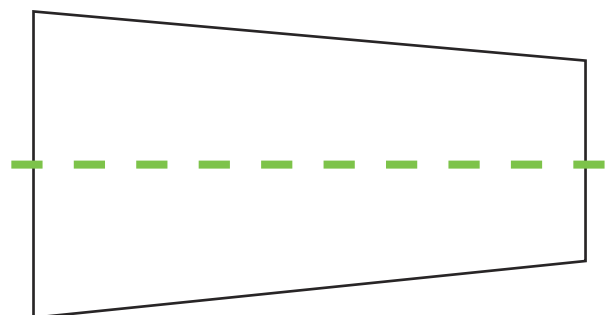
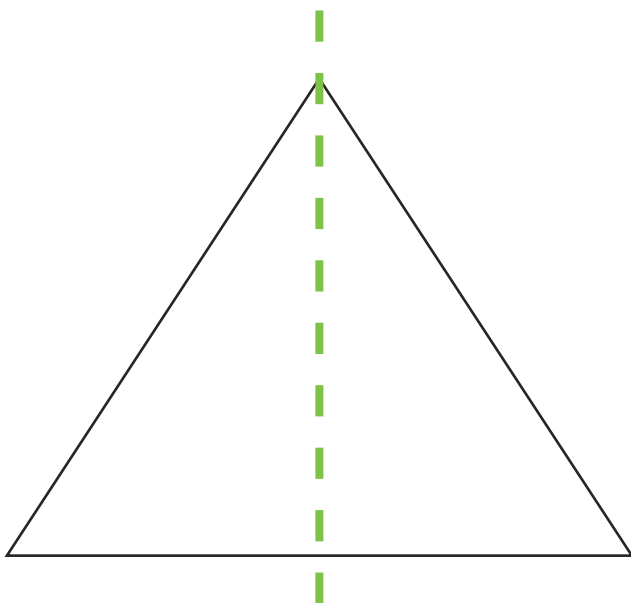


parallel

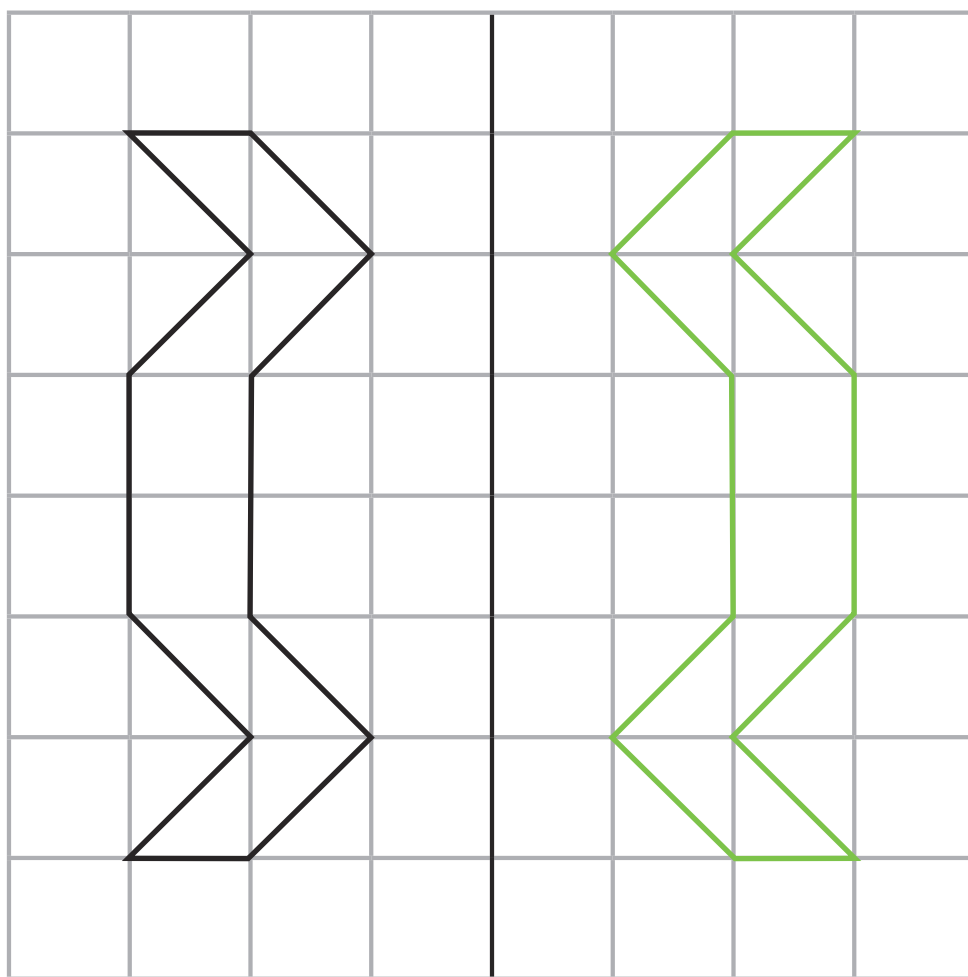


## Symmetry

64. Mark the lines of symmetry in these shapes:

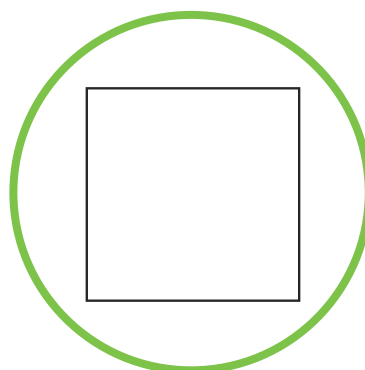
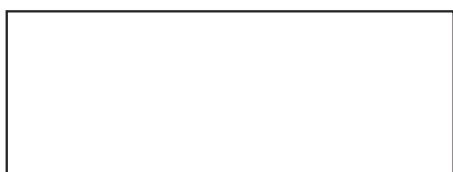
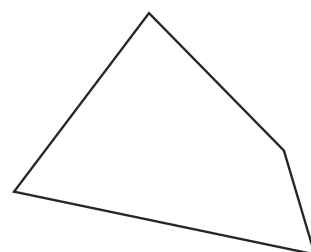
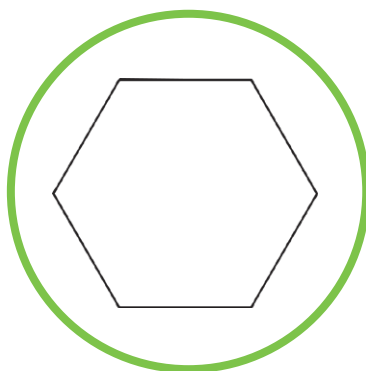
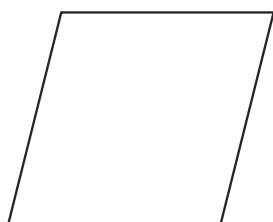


Complete the symmetrical figure:



## Regular and Irregular Polygons

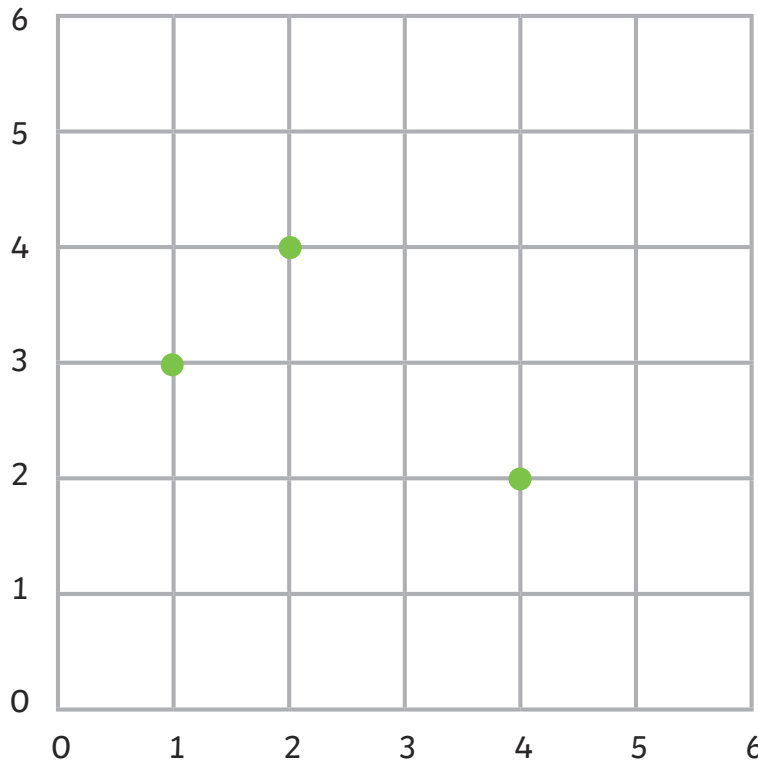
65. Circle the regular polygons:



# Geometry – Position and Direction

## Coordinates

66.



Label A, B and C The coordinates are

A (1,3)

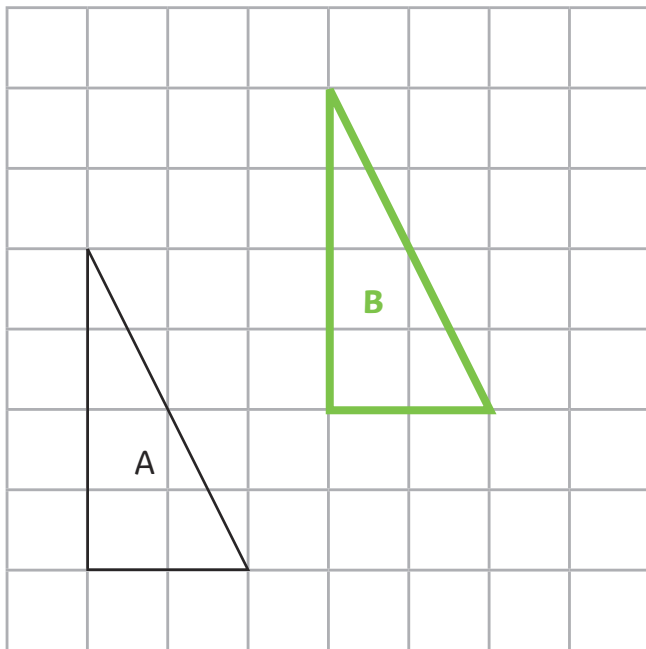
B (2,4)

C (4,2)

### Translation

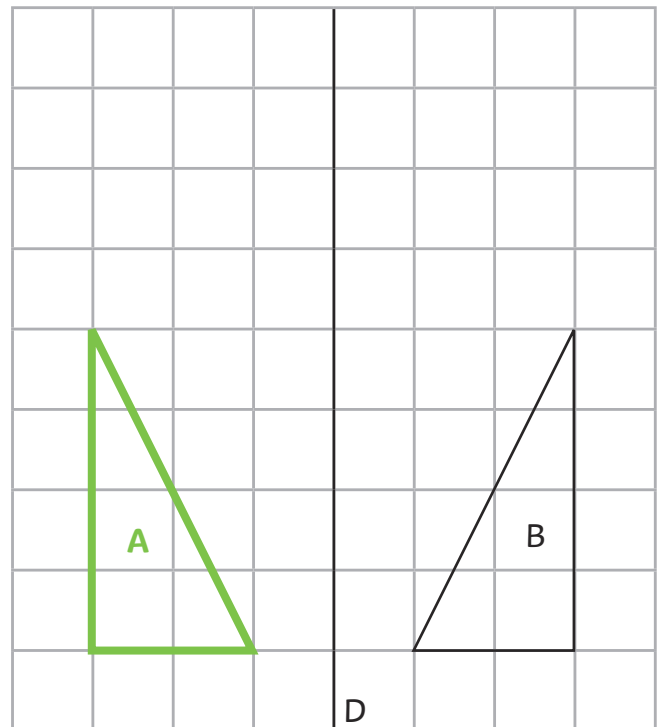
### Reflection

What are the coordinates of the point that will complete a rectangle? (3,1)



The triangle A is translated three squares to the right and two squares up to triangle B.

Mark triangle B



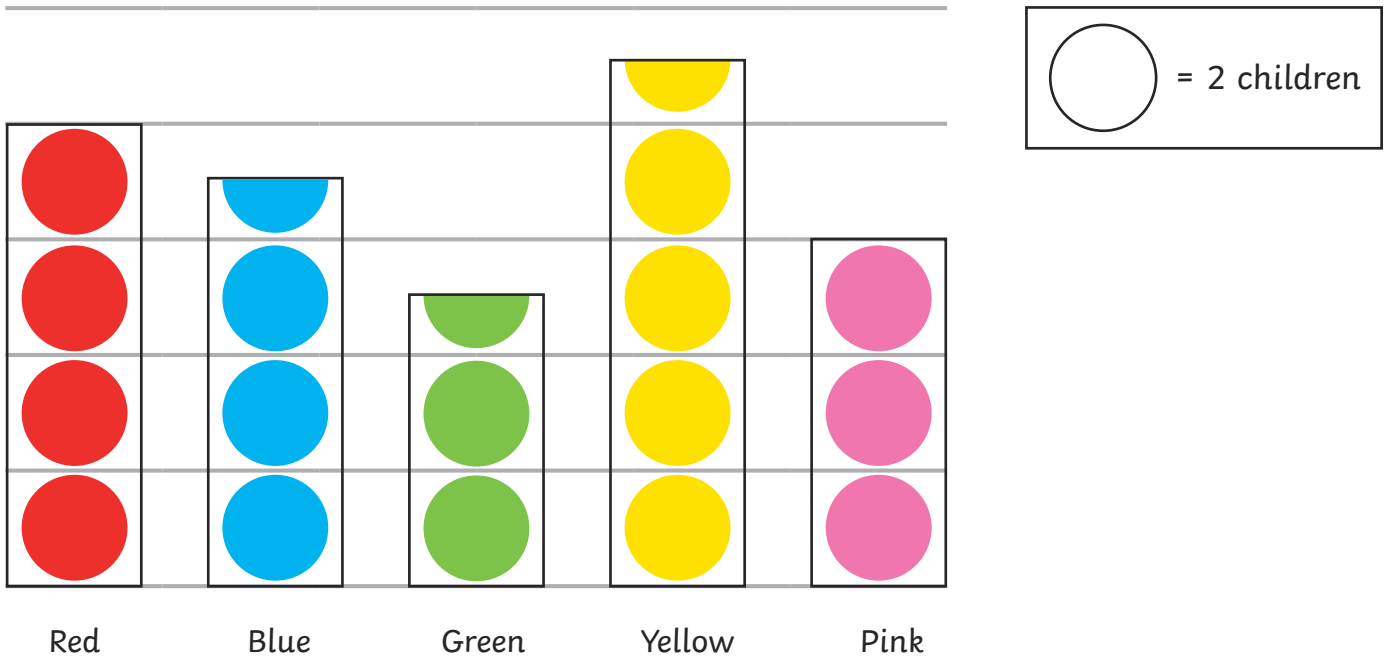
The triangle A is reflected about the line CD to triangle B.

# Statistics

67. Present data in these graphs and tables and solve problems:

## Pictograms

Favourite Colour



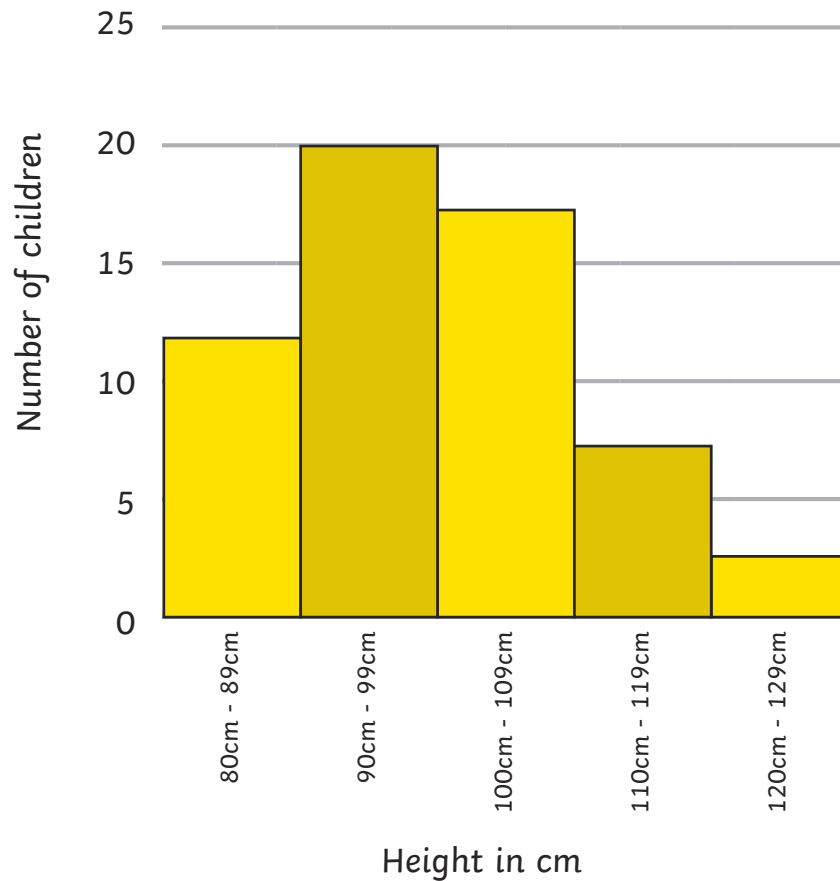
a) How many children chose their favourite colour? **35**

## Bar Charts



b) How many more children chose cheese and onion as their favourite crisps than ready salted? **10** children

## The Height of Children



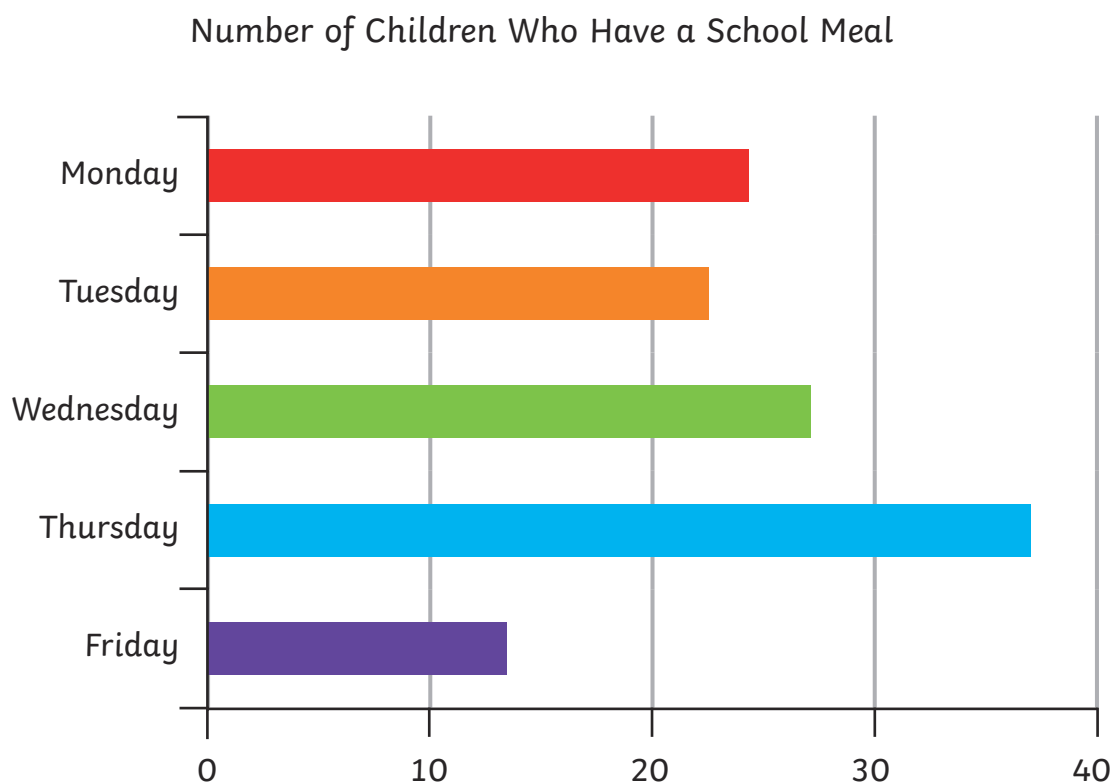
c) How many children are shorter than 1m? **32** or **33** children

## Tables

	Monday	Tuesday	Wednesday	Thursday
<b>Saturn</b>	2	1	3	4
<b>Twin</b>	0	2	2	3
<b>Stars</b>	5	3	2	0
<b>Cluster</b>	2	2	2	2
<b>Treasure</b>	1	3	5	0
<b>Tiger</b>	6	3	4	1
<b>Plimmy</b>	1	3	2	2

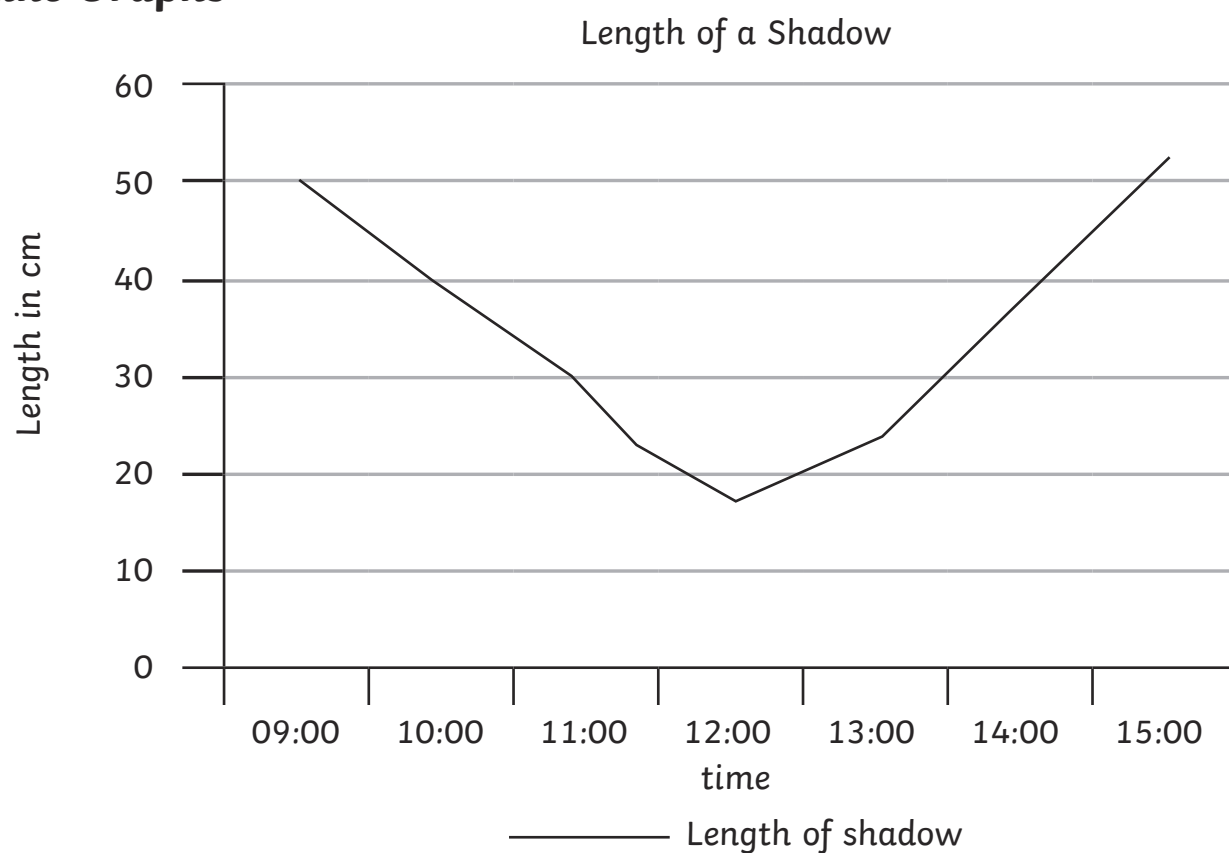
d) Which chocolate bar is the most popular? **Tiger**

## Time Graphs



e) How many children had a school meal during the week? Approximately **126** children

## Line Graphs



f) In which hour was the largest change in the length of the shadow? **Between 14:00 and 15:00**

## Time Graphs

Train timetable from London to Newcastle

Destination	Journey A	Journey B	Journey C
London	10:20	11:30	16:40
Derby	12:20		18:00
Sheffield	12:40	13:10	18:30
Hull	13:20	13:55	19:15
Newcastle	14:25	14:40	

g) Which train takes the least time to get from London to Hull? **Journey B is the shortest**