

Shapes & Angles

It has 4 equal sides and 4 right angles. (80) square


It has 4 right angles and 2 pairs of equal and parallel sides. (72) rectangle

It has 1 line of symmetry. 2 pairs of equal adjacent sides. (28) kite

It has 4 equal sides but no right angles. 2 lines of symmetry. (34) rhombus

It has no right angles but 2 pairs of equal and parallel sides. (22) parallelogram

It has just 2 parallel sides. (8) trapezium

We asked 100 people to identify these quadrilaterals. 

West (56) 270°


South East (41) 135°

East (78) 90°

North West (9) 315°

North East (62) 45°

South West (17) 225°

We asked 100 people what angle each of these compass positions was from North. 

7 faces, 6 of which are triangles (10) hexagonal based pyramid


8 vertices, all the faces are rectangles (53) cuboid

6 identical square faces (80) cube

15 edges, 10 vertices (1) pentagonal prism

All points on the surface are the same distance from the centre (75) sphere

2 circular faces and one curved face (85) cylinder

We asked 100 people to identify these 3D shapes. 

It has 3 equal sides and 3 equal angles. (60) equilateral triangle


It has 3 sides, 2 of which are equal. (43) isosceles triangle

It has 7 sides. (19) heptagon

It has a diameter, radius and circumference. (73) circle

It has 3 sides, none of which are the same length. (58) scalene triangle

It has 3 sides and one angle of 90°. (80) right angled triangle

We asked 100 people to identify these shapes. 

It has 9 sides. (15) nonagon


It has 5 interior angles. (62) pentagon

It has 10 sides. (34) decagon

It has 8 interior angles. (47) octagon

The total of its interior angles is 900°. (0) heptagon

It has 6 sides. (68) hexagon

We asked 100 people to identify these shapes. 

90° (86) right


37° (72) acute

181° (31) reflex

180° (58) straight


315° (34) reflex

155° (53) obtuse


We asked 100 people what type of angle each of these angles is. 

Fractions, Decimals & %


1/4	52	0.25
3/5	63	0.6
3/8	7	0.375
2/3	18	0.66667
7/10	76	0.7
1/20	10	0.05

We asked 100 people to convert these fractions to decimals. 


15/20	81	3/4
55/121	30	5/11
3/24	48	1/8
36/42	32	6/7
72/96	15	3/4
57/95	3	3/5

We asked 100 people to simplify these fractions. 


0.25	74	25%
0.6	85	60%
0.83	63	83%
0.03	21	3%
0.225	4	22.5%
0.50	87	50%

We asked to convert these decimals to %. 


80%	60	4/5
87.5%	0	7/8
37%	42	37/100
65%	23	13/20
75%	55	3/4
90%	82	9/10

We asked 100 people to convert these % to fractions in their simplest form. 

$1\frac{5}{6}$	75	11/6
$5\frac{1}{2}$	69	11/2
$6\frac{3}{8}$	32	51/8
$5\frac{4}{7}$	38	39/7
$12\frac{4}{9}$	7	112/9
$3\frac{4}{5}$	57	19/5

We asked 100 people to change these mixed numbers to improper fractions. 

2/3, 3/4, 1/4, 1/10	56	1/10 1/4 2/3 3/4
1/3, 1/4, 2/5, 4/7	18	1/4 1/3 2/5 4/7
1/3, 2/7, 1/4, 3/8	8	1/4 2/7 1/3 3/8
7/8, 4/5, 5/7, 9/10	9	5/7 4/5 7/8 9/10
1/10, 2/15, 3/32, 4/44	6	4/44 3/32 1/10 2/15
5/20, 6/18, 7/14, 8/40	42	8/40 5/20 6/18 7/14

We asked 100 people to order these fractions starting with the smallest. 

Fractions & % Calculations

$$\frac{1}{4} \text{ of } 36 \quad (70) \quad 9$$

$$\frac{3}{5} \text{ of } \text{£}1.20 \quad (9) \quad 72\text{p}$$

$$\frac{3}{4} \text{ of } 2 \text{ litres} \quad (55) \quad 1.5 \text{ litres or } 1\text{l } 500\text{ml}$$

$$\frac{7}{12} \text{ of } 96 \quad (38) \quad 56$$

$$\frac{3}{7} \text{ of } 28 \quad (49) \quad 12$$

$$\frac{3}{13} \text{ of } 78 \quad (5) \quad 18$$

We asked 100 people to calculate fractions of amounts.



$$\frac{1}{2} + \frac{1}{4} \quad (67) \quad \frac{3}{4}$$

$$\frac{1}{3} + \frac{1}{4} \quad (17) \quad \frac{7}{12}$$

$$1\frac{1}{5} + 2\frac{1}{10} \quad (25) \quad 3\frac{3}{10}$$

$$\frac{2}{5} + \frac{1}{4} \quad (13) \quad \frac{13}{20}$$

$$\frac{5}{6} + \frac{3}{4} \quad (2) \quad 1\frac{7}{12}$$

$$\frac{1}{5} + \frac{1}{3} \quad (14) \quad \frac{8}{15}$$

We asked 100 people to add these fractions.



$$\frac{3}{4} - \frac{1}{4} \quad (62) \quad \frac{1}{2}$$

$$\frac{1}{3} - \frac{1}{4} \quad (5) \quad \frac{1}{12}$$

$$\frac{2}{5} - \frac{1}{10} \quad (18) \quad \frac{3}{10}$$

$$1\frac{1}{4} - \frac{1}{2} \quad (39) \quad \frac{3}{4}$$

$$1\frac{1}{5} - \frac{1}{3} \quad (0) \quad \frac{13}{15}$$

$$\frac{7}{8} - \frac{1}{3} \quad (0) \quad \frac{13}{24}$$

We asked to convert these decimals to %.



$$\frac{1}{2} \times \frac{1}{4} \quad (43) \quad \frac{1}{8}$$

$$\frac{1}{5} \times \frac{1}{6} \quad (32) \quad \frac{1}{30}$$

$$\frac{2}{3} \times \frac{1}{4} \quad (0) \quad \frac{1}{6}$$

$$\frac{2}{3} \times \frac{2}{3} \quad (8) \quad \frac{4}{9}$$

$$\frac{1}{7} \times \frac{1}{8} \quad (25) \quad \frac{1}{56}$$

$$\frac{1}{3} \times \frac{1}{2} \quad (35) \quad \frac{1}{6}$$

We asked 100 people to multiply these fractions giving answers in the simplest form.



$$\frac{1}{6} \div 3 \quad (15) \quad \frac{1}{18}$$

$$\frac{1}{3} \div 2 \quad (21) \quad \frac{1}{6}$$

$$\frac{1}{2} \div 2 \quad (36) \quad \frac{1}{4}$$

$$\frac{2}{3} \div 3 \quad (1) \quad \frac{2}{9}$$

$$\frac{1}{6} \div 4 \quad (14) \quad \frac{1}{24}$$

$$\frac{3}{7} \div 9 \quad (9) \quad \frac{1}{21}$$

We asked 100 people to divide these fractions giving the answer in the simplest form.



$$25\% \text{ of } 2 \text{ litres} \quad (29) \quad 500\text{ml}$$

$$5\% \text{ of } 140 \quad (18) \quad 7$$

$$75\% \text{ of } 24 \quad (53) \quad 18$$

$$15\% \text{ of } \text{£}2.80 \quad (8) \quad \text{£}0.42 \text{ or } 42\text{p}$$

$$39\% \text{ of } \text{£}4 \quad (3) \quad \text{£}1.56$$


$$1\% \text{ of } 8\text{kg} \quad (16) \quad 80\text{g or } 0.08\text{kg}$$

We asked 100 people to calculate the % of these amounts.




Time


Five to eight	35	7:55
Twenty-seven minutes past 6	43	6:27
Seventeen minutes to one	14	12:43
Quarter to eleven	42	10:45
Half past three	79	3:30
Three minutes past noon	51	12:03

We asked 100 people to change these analogue times to digital. 


7:46	21	14 minutes to eight
10:15	71	Quarter past 10
2:35	42	25 minutes to 3
11.09	75	9 minutes past 11
5:37	13	23 minutes to 6
9:54	25	6 minutes to 10

We asked 100 people to change these digital times to analogue. 


2:30am	57	02:30
5:48pm	38	17:48
12:04am	29	00:04
9:47pm	25	21:47
7:15pm	35	19:15
10:18am	76	10:18

We asked 100 people to convert these times to 24 hour clock. 


5:40 – 6:25	59	45mins
2057 - 0109	7	4hr 12mins
10:15 – 10:50	76	35mins
06:37 – 10:29	9	3hr 52mins
5:48 – 6:14	35	26mins
2:04 – 4:28	37	2hr 24mins

We asked 100 people to work out how long these TV programmes were. 

10:17 + 35mins	51	10:52
6:51 + 28mins	33	7:19
8:40 + 90mins	38	10:10
23:48 + 1hr 16mins	9	0104
3:25 + 15mins	79	3:40
2:49 + 6hr 29mins	7	9:18

We asked 100 people to work out when a TV programme finished given its start time and length. 

6:15 – 2hr 30mins	44	3:45
3:18 – 46mins	37	2:32
2:45 – 6hrs 57mins	1	7:48
4:22 – 94mins	16	2:48
10:30 – 15mins	87	10:15
8:50 – 1hr 15mins	49	7:35

We asked 100 people to work out when a TV programme started given its length and finish time. 

Ratio & Proportion

12:8 (79) 3:2

38:95 (15) 2:5


56:42 (34) 4:3

22:121 (48) 2:11

36:15 (51) 12:5

34:51 (10) 2:3

We asked 100 people to simplify these ratios.



2:7 (53) 2/9

1:4 (62) 1/5


3:5:7 (7) 1/5

3:5 (54) 3/8

2:3:5 (9) 1/5

3:7:9 (25) 3/19

We asked 100 people to change ratios of white:other colours to proportion of white.



4/9 (42) 4:5

7/15 (36) 7:8


1/2 (39) 1:1

1/3 (47) 1:2

2/9 (43) 2:7

3/98 (29) 3:95

We asked to convert these proportion of white to ratios of white:other colours



20 buns (56) 80g

1 bun (69) 4g


100 buns (51) 400g


30 buns (47) 120g

17 buns (8) 68g

500 buns (17) 2kg

We asked 100 people to work out how much sugar they needed to make buns if you need 20g for 5 buns.



6 spiders  (57) 15 flies

45 flies (26) 18 spiders


100 flies (33) 40 spiders

14 spiders (29) 35 flies

56 (total of spiders and flies) (6) 16 spiders & 40 flies

400 spiders (11) 1000 flies

We asked 100 people to work out how many spiders and/or flies there would be if the ratio of spiders to flies is 2:5



2cm (87) 10m

15cm (52) 75m


3mm (6) 150cm or 1.5m

23cm (21) 115m

16cm (27) 80m

3.5cm (11) 17.5m


We asked 100 people to work out the actual length of a wall from measurements in a scale drawing (1cm = 5m)



Roman Numerals


10	75	X
1	86	I
15	63	XV
19	21	XIX
53	19	LIII
112	17	CXII

We asked 100 people to write these numbers as Roman Numerals.




LXXXVIII	4	88
IX	70	9
XXVII	29	27
III	89	3
LXXIV	9	74
XLI	18	41

We asked 100 people to write figures for these Roman Numerals.




550	23	DL
1888	3	MDCCCLXXXVIII
2015	26	MMXV
49	15	XLIX
7	87	VII
3988	0	MMMCMXXXVIII

We asked 100 people to convert these numbers to Roman Numerals.




CMXXIII	9	923
XVIII	91	18
CCCDXXII	28	372
MMMDCCLXVIII	0	3748
XCI	21	91
DCCCXCIV	7	894

We asked 100 people to write figures for these Roman Numerals.




V + IX	62	XXIV
VI x VIII	41	XLVIII
LXXXVI - XXXII	24	LIV
CXXXII ÷ XII	18	XI
CXLII + CCCLXXXIX	1	DXXXI
C x VIII	16	DCCC

We asked 100 people to write the answers to these calculations in Roman Numerals.



DCXLIII + CXXVIII	3	DCCLXXI
CDXC ÷ LXX	17	VII
MMDCCLXXXVIII - MDXXVII	0	MCCCLXI
LXXI - XLIX	24	XXII
IX + VIII	79	XVII
XII x VIII	37	XCVI


We asked 100 people to write the answers to these calculations in Roman Numerals.



Factors


16, 24	80	8
96, 72	23	24
63, 84	24	21
144, 40	16	8
156, 390	2	78
156, 60	7	12

We asked 100 people to find the highest common factors of these numbers.




4, 3	86	12
6, 8	70	24
15, 20	42	60
12, 20, 15	35	60
78, 182, 130	0	2730
8, 12, 15	18	120

We asked 100 people to find the lowest common multiple of these numbers.




36	42	$2 \times 2 \times 3 \times 3$
39	33	3×13
96	16	$2 \times 2 \times 2 \times 2 \times 2 \times 3$
10	84	2×5
156	11	$13 \times 2 \times 2 \times 3$
2310	0	$2 \times 3 \times 5 \times 7 \times 11$

We asked 100 people to factorise these numbers.




13×2^2	27	52
$2^2 \times 3^2$	91	36
$5^2 \times 2^2$	28	100
$10^3 \times 2^3$	0	8000
$3^2 \times 2^4$	21	144
$10^2 \times 3^2$	7	900

We asked 100 people to work out these indices.




22^2	2	484
8^2	41	64
4^2	59	16
2^2	79	4
12^2	37	144
100^2	35	10000

We asked 100 people to write calculate these squares.



$\sqrt{9}$	82	3
$\sqrt{49}$	43	7
$\sqrt{121}$	27	11
$\sqrt{169}$	5	13
$\sqrt{36}$	49	6
$\sqrt{256}$	0	16

We asked 100 people to find the square root of these numbers.



Number Sequences

7 5 3 1 (31) -1 -3


1 4 16 25 (23) 36 49

3 5 8 12 (39) 17 23

0.1 0.2 0.3 0.4 (94) 0.5 0.6

37 43 49 55 (52) 61 67

2 4 8 16 (46) 32 64

We asked 100 people to find the next two numbers in these sequences. 

19 12 6 1 (10) -3 -6


2 3 5 7 (7) 11 13

2.16 2.11 2.06 2.01 (23) 1.96 1.91

0 1 1 2 (2) 3 5

26 28 30 32 (79) 34 36

2 6 18 54 (13) 312 936

We asked 100 people to find the next two numbers in these sequences. 

154 _ _ 205 (3) 171 188


4 _ 4.1 _ 4.2 (29) 4.05 4.15

2 _ 16 _ 30 (32) 9 23

105 _ _ 141 (9) 117 129

11 _ _ -16 (21) 2 -7

6 _ _ 15 18 (76) 9 12

We asked 100 people to fill in the missing numbers in these sequences. 

8 11 14 17 (26) $3n + 5$


0.5 1 1.5 2 (9) $0.5n$

1 7 13 19 (21) $6n - 5$

2 4 6 8 (66) $2n$

9 7 5 3 (6) $-2n + 11$

4 1 -2 -5 (4) $-3n + 7$

We asked 100 people to work out the n^{th} term in these sequences. 

9 5 1 -3 (5) -47


3 6 9 12 (59) 45

0.4 0.7 1.0 1.3 (8) 4.6

-4 -7 -10 -13 (7) -46

21 30 39 48 (0) 147

10 15 20 25 (48) 80

We asked 100 people to find the 15th term in these sequences. 

1 8 27 _ _ (12) 64 125


40 20 10 _ _ (39) 5 2.5

7 _ 23 _ 39 (19) 15 31

4 8 12 _ _ (79) 16 20

0.125 0.25 _ 0.5 _ (7) 0.375 0.625

3.5 1 _ -4 _ (9) -1.5 -6.5

We asked 100 people to find the missing number in these sequences. 

Algebra

$x + 1 = 2$ (75) $x = 1$


$x - 4 = 6$ (52) $x = 10$

$3 + x = 8$ (55) $x = 5$

$-4 + x = 8$ (21) $x = 12$

$21 - x = 6$ (39) $x = 15$

$3 + x - 2 = 5$ (40) $x = 4$

We asked 100 people to find the value of x . 

$2x = 4$ (83) $x = 2$


$3x = 51$ (19) $x = 17$

$9x = 81$ (43) $x = 9$

$6x = 24$ (64) $x = 4$

$5x = 75$ (28) $x = 15$

$8x = 48$ (52) $x = 6$

We asked 100 people to find the value of x . 

$2x + 2 = 4$ (69) $x = 1$


$6x + 5 = 23$ (29) $x = 3$

$10x - 7 = 83$ (33) $x = 9$

$3x - 6 = 6$ (31) $x = 4$

$7x - 5 = 51$ (25) $x = 8$

$\frac{x}{3} = 12$ (15) $x = 36$

We asked 100 people to find the value of x . 

$-3x - 5$ $x = 3$ (12) -14


$17x + 8$ $x = 4$ (8) 76

$6x$ $x = 8$ (64) 48

$3x + 7$ $x = 6$ (41) 25

$19 - 5x$ $x = 6$ (22) -11

$x + 3$ $x = 2$ (81) 5

We asked 100 people to work out the value of a formula given x . 

$4x - 8y$ $x = 7, y = 3$ (42) 4


$6x + 3y$ $x = 0.5, y = 14$ (13) 45

$5y - 2x$ $x = 9, y = 3$ (27) -3

$8x + 7y$ $x = 9, y = 7$ (32) 121

$x + 2y$ $x = 6, y = 8$ (81) 22

$3x + 5y$ $x = 19, y = 16$ (5) 137

We asked 100 people to work out the value of a formula given x and y . 

$2y - x = 7$ $17 > x > 11$ (8) $x=13, y=10$ or $x=15, y=11$


$3y \times 6x = 72$ $x > y$ (4) $x=4, y=1$

$4x \times 2y = 48$ $y < 5, x > y$ (19) $x=6, y=1$ or $x=3, y=2$

$3x + 4y = 20$ (13) $x=4, y=2$

$x + y = 10$ $x > 7, y > 0$ (78) $x=8, y=2$ or $x=9, y=1$


$5x + 6y = 40$ (12) $x=2, y=5$

We asked 100 people to find possible values for x and y – positive whole numbers only. 

Rounding


59	75	60
125	47	130
73	85	70
495	40	500
4	28	0
340	62	340

We asked 100 people to round these numbers to the nearest 10.




51	61	100
2929	45	2900
975	39	1000
349	82	300
1250	42	1300
460	79	500

We asked 100 people to round these numbers to the nearest 100.




489	58	0
4500	69	5000
29500	61	30000
154687	49	155000
299499	41	299000
14321	78	14000

We asked 100 people to round these numbers to the nearest 1000.




9.5	67	10
5.18	69	5
0.499999	47	0
6.7	76	7
15.489	43	15
19.50001	52	20

We asked 100 people to round these numbers to the nearest whole number.




67	85	70
54	58	60
21	53	30
642	48	650
991	41	1000
23.42	45	30

We asked 100 people to round these numbers up to nearest 10.



4859361	40	4859000
998	37	0
15951	48	15000
5864	63	5000
7952	59	7000
5124	76	5000


We asked 100 people to round these numbers down to the nearest 1000.



Data Handling


18, 16, 15, 19, 7	67	15
1.2, 2.3, 3.4, 1.5, 1.8	6	2.04
20, 16, 23, 19, 17	61	19
-7, 6, -3, -10, 4	22	-2
2, 3, 10, 5	82	5
550, 1600, 950, 800, 400	2	860

We asked 100 people to find the mean of these numbers.




17, 26, 9, 4, 18	76	17
9.09, 9, 0.999, 19.19, 8.99	23	9
251, 317, 95, 76, 108	55	108
95, 41, 25, 37, 81, 101, 65	34	65
41, 59, 87, 60, 94, 38	0	59.5
460, 580, 973, 428, 647	41	580

We asked 100 people to find the median of these numbers.




6, 9, 7, 8, 7, 5	75	7
21, 25, 24, 25, 26, 21, 21	26	21
1.8, 1.5, 1.9, 1.8, 1.6	32	1.8
512, 623, 410, 623, 522,	36	623
0.5, 0.7, 0.9, 0.8, 0.4, 0.9	28	0.9
234, 423, 324, 432, 342, 234	22	234

We asked 100 people to find the mode of these numbers.




21.5, 48.6, 72.9, 80.1	24	58.6
-7, 2, 14, -5, 11	16	21
75, 92, 68, 145, 67	42	78
15, 24, 32, 25, 28, 17	58	17
6, 7, 8, 2, 12	76	10
2001, 780, 598, 14	9	1987

We asked 100 people to find the range of these numbers.




Bar Chart	Venn Diagram	Line Graph
A (72)	B (50)	C (42)
Pie Chart	Pictogram	Carroll Diagram
D (67)	E (35)	F (22)

We asked 100 people to identify these charts.



	29	49
	73	8
	59	17
	87	3
	43	28
	37	41

We asked 100 people to find the frequency from these tally scores.



Area, Perimeter & Volume

Rectangle (4cm x 7cm) (76) 22cm


Rectangle (19km x 13km) (41) 64km

Square with side 7mm (48) 28mm

Rectangle (15m x 12m) (59) 54m

Regular hexagon (side 13m) (32) 78m

Equilateral triangle (side 4m) (43) 12m

We asked 100 people to find the perimeter of these shapes. 

Rectangle (13cm x 8cm) (23) 104cm²


Square with side 11m (45) 121m²

Rectangle (4cm x 8cm) (72) 32cm²

Square with side 100m (29) 10000m²

Rectangle (12km x 15km) (21) 180m²

Rectangle (3m x 4m) (83) 12m²

We asked 100 people to find the area of these shapes. 

Cuboid (3cm x 2m x 5cm) (0) 3000cm³


Cube with edge 3cm (46) 27cm³

Cuboid (4m x 6m x 5m) (53) 120m³

Cuboid (2cm x 3cm x 6cm) (72) 36cm³

Cuboid (7mm x 6mm x 5mm) (45) 210mm³

Cube (area of 1 face = 25cm²) (13) 125cm³

We asked 100 people to find the volume of these shapes. 

Square of area 81cm² (53) 9cm


Rectangle – area 36m², side 4m. (77) 9m

Cube of volume 64m³ (29) 4m


Cuboid – volume 144m³, sides 8m, 2m (5) 9m

Rectangle – area 15m², side 2m (38) 7.5m


Rectangle – area 111cm², side 3cm (9) 37cm

We asked 100 people to find the length of the missing side. 

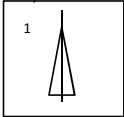
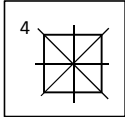
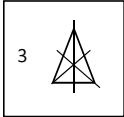
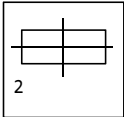
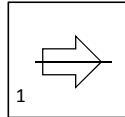
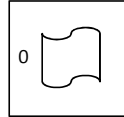
$3 \times 4 \times \frac{1}{2} = 6\text{cm}^2$	$6 \times 3 \times \frac{1}{2} = 9\text{cm}^2$	$7 \times 7 \times \frac{1}{2} = 24.5 \text{ cm}^2$
A (64)	B (39)	C (45)
$6 \times 3 = 18 \text{ cm}^2$	$8 \times 4 = 32 \text{ cm}^2$	$7 \times 3 = 21 \text{ cm}^2$
D (38)	E (37)	F (36)

We asked 100 people to find the area of these shapes. cm² 

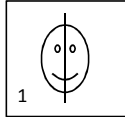
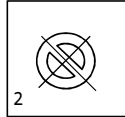
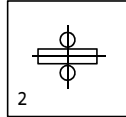
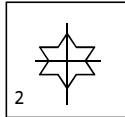
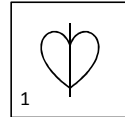
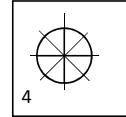
$5 \times 4 = 20$ $3 \times 8 = 24$ $= 44\text{cm}^2$	$4 \times 10 = 40$ $3 \times 4 = 12$ $= 52\text{cm}^2$	$2 \times 7 = 14$ $4 \times 7 = 28$ $= 42\text{cm}^2$
A (48)	B (42)	C (53)
$16 \times 7 = 112$ $3 \times 12 = 36$ $112 - 36 = 76\text{cm}^2$	$2 \times 4.5 = 9$ $1 \times 1.5 = 1.5$ $8 \times 2.5 = 20$ $= 30.5 \text{ cm}^2$	$9 \times 3 = 27$ $2 \times 3 \times \frac{1}{2} = 3$ $= 30\text{cm}^2$
D (12)	E (0)	F (3)

We asked 100 people to find the area of these shapes. 

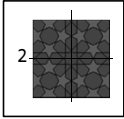
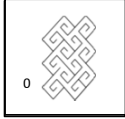
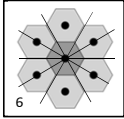

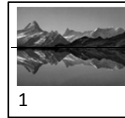
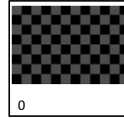
Symmetry & 3D nets

 1 A (72)	 4 B (23)	 3 C (31)
 2 D (42)	 1 E (69)	 0 F (35)

We asked 100 people how many lines of symmetry each shape has.

 1 A (75)	 2 B (33)	 2 C (39)
 2 D (40)	 1 E (73)	 4 F (19)

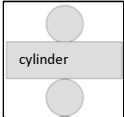
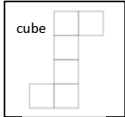
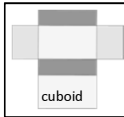
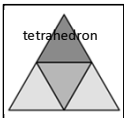
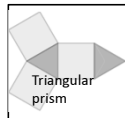
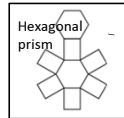
We asked 100 people how many lines of symmetry each shape has.

 2 A (49)	 0 B (38)	 6 C (4)
 0 D (39)	 1 E (37)	 0 F (26)

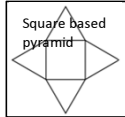
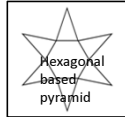
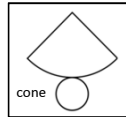
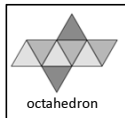

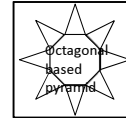
We asked 100 people how many lines of symmetry each shape has.

A B C D	22	A C D
E F G H I	15	E
J K L M N	45	K M
O P Q R	38	none
S T U V	59	T U V
W X Y Z	48	W Y

We asked 100 people to name the capital letter(s) in each row with just one line of symmetry.

 cylinder A (48)	 cube B (83)	 cuboid C (61)
 tetrahedron D (19)	 Triangular prism E (11)	 Hexagonal prism F (3)

We asked 100 people how many lines of symmetry each shape has.


 Square based pyramid A (69)	 Hexagonal based pyramid B (24)	 cone C (63)
 octahedron D (0)	 pentagonal prism E (14)	 Octagonal based pyramid F (2)

We asked 100 people to identify the 3D shapes from the nets.

Money


£4.11	34	£0.89 or 89p
£1.33	24	£3.67
£2.57	38	£2.43
£3.48	37	£1.52
70p	74	£4.30
£1.60	62	£3.40

We asked 100 people to work out how much change they would get from £5.




£3.99	62	£6.01
£2.57	26	£7.43
£6.18	24	£3.82
£5.55	37	£4.45
£8.34	29	£1.66
£4	98	£6

We asked 100 people to work out how much change they would get from £10.




£7.41	37	£12.59
£16.27	31	£3.73
£12.91	34	£7.09
£9.34	43	£10.66
£2.50	74	£17.50
£6.99	53	£13.01

We asked 100 people to work out how much change they would get from £20.




£80 – 5% off	51	£76
£75 – 20% off	59	£60
£36 – 17% off	0	£29.88
£40 – 50% off	89	£20
£35.40 – 10% off	13	£31.86
£60 – 15% off	34	£51

We asked 100 people to find the sale price of these items.




Was £75 Now £63.75	3	15%
Was £72 Now £48	43	33%
Was £16 Now £14.40	39	10%
Was £1000 Now £950	52	5%
Was £60 Now £30	84	50%
Was £9.60 Now £8.40	19	12.5%

We asked 100 people to work out the % off as the prices were reduced.



5% off – Sale price £57	43	£60
10% off – Sale price £72	51	£80
25% off – Sale price £108	18	£144
20% off – Sale price 80p	67	£1
40% off – Sale price £99	14	£165
37.5% off – Sale price £3.50	0	£5.60


We asked 100 people to find the original price from the sale price and the % off.



Place Value


69,342	58	three hundred
9,531,754.29	32	thirty thousand
31,248,596	10	thirty million
2564.23	19	three hundredths
954,324,578.6	21	three hundred thousand
732	89	thirty

We asked 100 people the value of 3 in each of these numbers.




6942.5	62	six thousand
5.06	21	six hundredths
3954.256	3	six thousandths
975.625	39	six tenths
986,248,321.2	22	six million
4296.1	86	six

We asked 100 people the value of the digit 6.




9.01, 9.19, 9.91, 9	26	9, 9.01, 9.19, 9.91
754, 745, 747, 774	59	745, 747, 754, 774
.09, 0.90, 0.1, 0.19	25	0.09, 0.1, 0.19, 0.9
11010, 10110, 11100, 10101	21	10101, 10110, 11010, 11100
123, 213, 321, 312, 231	32	123, 213, 231, 312, 321
123012, 123021, 12392.1	19	12392.1, 123012, 123021

We asked 100 people to order these sets of numbers starting with the smallest number.




68162	45	12668
31872	43	12378
21814	34	11248
981	86	189
158851	29	115588
24182	35	12248

We asked 100 people to rearrange these digits to give the smallest number.




62×10	83	620
2.16054×10000	2	21605.4
25.6×10	49	256
$.037 \times 1000$	09	37
28.03×10	41	280.3
2.356×100	24	235.6

We asked 100 people to work out these multiplication calculations.



$25.09 \div 1000$	3	0.02509
$6 \div 10$	50	0.6
$951.3 \div 100$	17	9.513
$150 \div 10$	84	15
$2658 \div 100$	23	26.58
$312.68 \div 100$	10	3.1268


We asked 100 people to work out these division calculations.



Co-ordinates & Compass points


(2,2) (2,3) (3,2)	51	right angled triangle
(2,5) (4,5) (4,3) (2,3)	62	square
(4,1) (4,2) (7,2) (7,1)	53	rectangle
(6,1) (7,4) (8,1)	31	isosceles triangle
(5,2) (6,3) (9,3) (8,2)	14	parallelogram
(2,2) (0,6) (2,8) (4,6)	7	kite

We asked 100 people to identify the shapes from the co-ordinates.




(2,2)	68	(-2,2)
(1,6)	47	(-1,6)
(6,1)	45	(-6,1)
(-5,4)	9	(5,4)
(7,-6)	17	(-7,-6)
(-10,-14)	5	(10,-14)

We asked 100 people to reflect these co-ordinates through the y axis and give the new co-ordinate.




(-9,-7)	19	(-9,7)
(8,0)	8	(8,0)
(-7,8)	27	(-7,-8)
(4,5)	70	(4,-5)
(6,-3)	25	(6,3)
(-3,-3)	17	(-3,3)

We asked 100 people to reflect these co-ordinates through the x axis and give the new co-ordinate.




SW	56	NE
S	92	N
NE	49	SW
NW	52	SE
SE	47	NW
E	84	W

We asked 100 people to turn 180° from each of these compass points and name the direction they are now facing.




NW – ¼ turn clockwise	21	SW
N – ¼ turn clockwise	87	E
SW – ¼ turn anti-clockwise	29	SE
E – ¼ turn anti-clockwise	47	S
SE – ¼ turn clockwise	41	SW
NE – ½ turn anti-clockwise	36	SW

We asked 100 people to give the new direction after a turn.



E – turn 315° clockwise	6	NE
SE – turn 45° anti-clockwise	48	E
NW – turn 270° anti-clockwise	21	NE
N – turn 180° clockwise	74	S
SW – turn 225° clockwise	16	E
S – turn 135° clockwise	11	NW

We asked 100 people to give the new direction after a turn.



Negative numbers

5°C rise 7° (83) 12°C


6°C drop 10° (48) -4°C

-8°C rise 15° (39) 7°C

-2°C drop 13° (28) -15°C

7°C drop 14° (42) -7°C

-7°C drop 14° (25) -21°C

We asked 100 people what the new temperature is. 

start 7°C, finish -8°C (38) drop 15°


start -9°C, finish -6°C (31) rise 3°

start 12°C, finish -3°C (37) drop 15°

start -3°C, finish -19°C (32) drop 16°

start -1°C, finish 1°C (69) rise 2°

start 1°C, finish -1°C (65) drop 2°

We asked 100 people to find the drop or rise in temperature. 

9°C rise 4° then fall 11° (69) 2°C


-5°C fall 6° then fall 4° (46) -15°C

3°C fall 5° then rise 11° (51) 9°C

6°C fall 19° then rise 8° (24) -5°C

-7°C rise 2° then rise 3° (36) -2°C

-19°C rise 13° then fall 9° (7) -15°C

We asked 100 people what the new temperature is. 

Start £40.50 spend £60 (14) -£19.50


Start -£14 receive £40 (24) £28

Start -£12 receive £21 (41) £9

Start £5.50 spend 11.75 (5) -£6.25

Start £15 spend £28 (56) -£13

Start £7 receive £19 (86) £26

We asked 100 people to give the new balance of a bank account after spending or receiving money. 

Start £50 finish -£20 (68) Spent £70


start £-£47.50 finish £12 (25) Received £59.50

Start £38 finish -£25.40 (27) Spent £63.40

Start -£10 finish £10 (81) Received £20

Start £106.34 finish -£45.23 (7) Spent £151.57

Start -£45 finish -£97.30 (19) Spent £52.30

We asked 100 people to find the amount spent or received from these bank accounts. 

Start £25, spend £13, receive £7 (79) £19


Start -£14, spend £4, spend £6.50 (31) -£24.50

Start £87.20, spend £100, receive £19.50 (4) £6.70

Start -£200, spend £50, receive £150 (48) -£100


Start £25, receive £12, receive £13.50 (56) £50.50

Start -£64, spend £14, receive £16.30 (17) -£61.70


We asked 100 people to give the new balance of a bank account after spending and/or receiving money. 

Puzzles


6	69	$3+3+3-3$
9	55	$3 \times 3 + 3 - 3$ or $(3+3-3) \times 3$
3	28	$(3+3+3)/3$
7	19	$3+3 + 3/3$
5	17	$3+3 - 3/3$
2	3	$3/3 + 3/3$

We asked 100 people to make these numbers using 4 (no more, no less) threes and any Maths signs. 3 3 3 3 


0	66	$44-44$ or $4+4-4-4$
8	43	$4 + 4 + 4 - 4$
20	2	$4 \times (4/4 + 4)$
1	32	$44/44$ or $4+4/4+4$
9	17	$4/4 + 4 + 4$
3	28	$(4+4+4)/4$

We asked 100 people to make these numbers using 4 (no more, no less) fours and any Maths signs. 4 4 4 4 


385cm^3	8	5cm x 7cm x 11cm
4199cm^3	0	13cm x 17cm x 19cm
30cm^3	72	2cm x 3cm x 5cm
1001cm^3	4	7cm x 11cm x 13cm
105cm^3	23	3cm x 5cm x 7cm
2431cm^3	0	11cm x 13cm x 17cm

We asked 100 people to find the l x w x h of these cuboids. All the sides are whole numbers > 1. 

Multiple of 12; multiple of 8; sum of its 2 digits=9	17	72
<100; multiple of 7; sum of digits=11	23	56
Square number; <200; 3 digits; product of digits=54	0	169
Square number; odd; <50; sum of its digits=13	43	49
Prime number; <50; product of digits =21	19	37
Multiple of 10; >40; <60	76	50

We asked 100 people to find the number from the clues. 

£2.49	23	£2, 20p, 20p 5p, 2p, 2p (6)
98p	26	50p, 20p, 20p, 5p, 2p, 1p (6)
43p	72	20p, 20p, 2p, 1p (4)
35p	90	20p, 10p, 5p (3)
£1.64	54	£1, 50p, 10p, 2p, 2p (5)
£3.89	6	£2, £1, 50p, 20p, 10p, 5p, 2p, 2p (8)

We asked 100 people to find the least number of UK coins needed to make each of these amounts. 

I am 3 years older than Sam who was 12 five years ago.	54	20
I am 7 years younger than Jane who will be 32 in 2 years time.	45	23
In 3 years I will be twice as old as Sarah who was 17 last year.	2	39
I am 3 years older than Jim who is 5 years younger than Anne (20).	76	18
In 2 years time I will be twice as old as James. He is 33 now.	3	68
My age is midway between Henry (38) and Georgia (12).	13	26

We asked 100 people to find the ages from the clues. 