

Armada Academy



S2 Maths Revision Booklet

How to use this booklet:

There are questions on each topic that has been covered so far in the S2 mathematics course as well as some revision from S1.

Next to each set of questions is a QR code which you can scan with your phone.

These QR codes will take you videos with explanations of how to answer the questions if you are unsure.

1. Number Work

Four Operations with Whole Numbers and Decimals

1. Use an appropriate strategy to calculate:

- | | | | |
|--------------------|--------------------|----------------------|-----------------------|
| a) $67 + 18$ | b) $27 + 21$ | c) $123 + 564$ | d) $2385 + 584$ |
| e) $39104 + 22934$ | f) $81 - 43$ | g) $557 - 319$ | h) $982 - 93$ |
| i) $9000 - 1182$ | j) $48832 - 14501$ | k) $432 + 217 - 119$ | l) $5000 - 231 + 190$ |
| m) $6.28 + 3.1$ | n) $9.98 - 4.56$ | o) $7 - 4.56$ | p) $15.3 + 21.46$ |



Column
Addition



Partitioning
Addition

2. At a football match there are 2942 Rovers fans and 9381 City fans.

How many more fans did City have?



Empty
Number Line
Addition

3. This table shows the lengths of three rivers.

How much longer is the Nile than the combined lengths of the other two rivers?

River	Length in kilometres
Nile	6,853
Thames	346
Mississippi	3,734



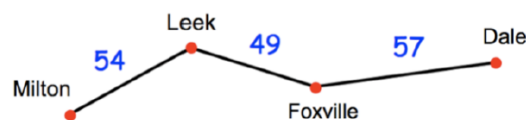
Column
Subtraction



Partitioning
Subtraction

4. The distances, in kilometres, between four towns are shown on the map.

- a) Work out the distance between Leek and Dale.
b) Work out the distance between Milton and Dale



Empty
Number Line
Subtraction

5. Complete the calculations to find the missing digits:

a)

$$\begin{array}{r} 4 \square \\ + \square 4 \\ \hline 72 \end{array}$$

b)

$$\begin{array}{r} 5 \square \square \\ + \square 7 1 \\ \hline 934 \end{array}$$

c)

$$\begin{array}{r} 547 \\ - 1 \square \square \\ \hline \square 69 \end{array}$$

6. Use an appropriate strategy to calculate:

- | | | | |
|-------------------|-------------------|--------------------|--------------------|
| a) 79×8 | b) 32×9 | c) 902×6 | d) 1236×8 |
| e) $336 \div 8$ | f) $657 \div 9$ | g) $1382 \div 4$ | h) $1273 \div 6$ |
| i) 7.8×5 | j) $19.82 \div 4$ | k) 0.03×7 | l) $0.021 \div 7$ |



Grid Method
Multiplication



Column
Multiplication

7. How many days are there in 35 weeks?

8. At a wedding, there are 16 tables. 15 tables seat 6 guests.

1 table will seat 8 guests.

Work out the total number of chairs needed.



Short
Division

9. Leanne works in a cinema.

She is paid £7.25 per hour for the first 90 hours she works each month. Leanne is paid an overtime rate of £9 per hour for any additional hours. In September she works 138 hours.

Work out how much Leanne is paid.

10. A school has 5 year groups and 835 students in total. Each year group has an equal number of students.

How many students are in each year group?

11. Leah bought a new car costing £18,000. She paid a deposit of £2,000.

Leah paid the rest of the money over 50 equal monthly payments.

How much was each monthly payment?

12. Sally is paid £8 per hour.

In one week she is paid £264.

How many hours did Sally work?

13. Use an appropriate strategy to calculate:

a) 79×13

b) 32×29

c) 902×46

d) 1236×85

e) $288 \div 18$

f) $966 \div 23$

g) $2352 \div 56$

h) $7410 \div 95$



Long
Multiplication
(Column)

14. Felicity spends 25 minutes reading every day.

How long does she spend reading during the month of May?



Long
Division

15. The product of Jack's age and Florence's age is 266. Jack is 14 years old. How old is Florence?

16. A rugby team brought 18 coaches of supporters to a cup match. Each coach holds 53 passengers.

How many supporters are brought to the cup match by the 18 coaches?

17. Jenny bought a motorbike.

She paid a deposit of £345 and 36 monthly payments of £44. At the end of the payments, she sold the motorbike for £1400. How much did it cost Jenny in total?

18. A theatre has 28 seats in each row. There are 1036 seats in total. How many rows are there?

Multiplying and Dividing by 10, 100, 1000

1. Calculate:

a) 79×10

b) 324×1000

c) 9.2×100

d) 12.36×1000

e) $2800 \div 100$

f) $966 \div 10$

g) $235\,200 \div 1000$

h) $741 \div 1000$



Multiplying and
Dividing by 10,
1000 and 1000

2. Calculate:

a) 79×40

b) 324×8000

c) 9.2×300

d) 12.36×7000

e) $2800 \div 400$

f) $966 \div 20$

g) $235\,200 \div 8000$

h) $741 \div 3000$



Multiplying and
Dividing by
multiples of
10, 1000 and
1000

Rounding

1. Round to the nearest 10

- | | | | |
|---------|---------|---------|---------|
| (a) 121 | (b) 146 | (c) 164 | (d) 185 |
| (e) 292 | (f) 238 | (g) 312 | (h) 333 |



Rounding to the nearest 10

2. Round to the nearest 100

- | | | | |
|----------|----------|----------|----------|
| (a) 1430 | (b) 1280 | (c) 1610 | (d) 1550 |
| (e) 4030 | (f) 6080 | (g) 7420 | (h) 8160 |



Rounding to the nearest 100

3. Round to the nearest 1000

- | | | | |
|-----------|-----------|-----------|-----------|
| (a) 21800 | (b) 18300 | (c) 17600 | (d) 19200 |
| (e) 11590 | (f) 16350 | (g) 24500 | (h) 34800 |

4. Round to 1 decimal place

- | | | | | |
|-------------|-------------|-------------|----------------|-----------|
| (a) 5.191 | (b) 8.246 | (c) 10.087 | (d) 39.555 | (e) 0.831 |
| (f) 93.2941 | (g) 38.3152 | (h) 7.26229 | (i) 0.54868696 | |



Rounding to decimal places

5. Round to 2 decimal places

- | | | | | |
|------------|-----------|------------|-------------|--------------|
| (a) 3.487 | (b) 2.613 | (c) 1.984 | (d) 10.046 | (e) 8.155 |
| (f) 19.367 | (g) 3.141 | (h) 6.0698 | (i) 4.26317 | (j) 93.46197 |

6. Round to 3 decimal places

- | | | | |
|--------------|---------------|---------------|----------------|
| (a) 0.0346 | (b) 6.7568 | (c) 4.2251 | (d) 1.7583 |
| (e) 40.48546 | (f) 128.01891 | (g) 0.5059802 | (h) 384.456094 |



Rounding to significant figures

7. Round to 1 significant figure

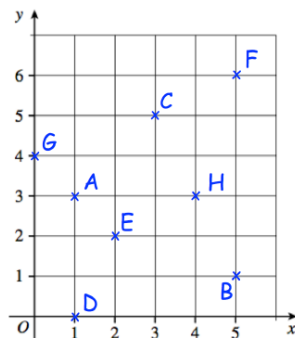
- | | | | | | | |
|-----------|-----------|-----------|------------|------------|-----------|-----------|
| (a) 2.9 | (b) 3.2 | (c) 5.7 | (d) 46.81 | (e) 57.25 | (f) 80.96 | (g) 94.9 |
| (h) 115.1 | (i) 8.482 | (j) 13.65 | (k) 66.321 | (l) 5501.4 | (m) 48.02 | (n) 99.99 |

8. Round to 2 significant figures

- | | | | | | | |
|---------|---------|----------|-----------|----------|----------|----------|
| (a) 844 | (b) 665 | (c) 129 | (d) 2840 | (e) 9250 | (f) 1359 | (g) 298 |
| (h) 504 | (i) 999 | (j) 3841 | (k) 48500 | (l) 13.7 | (m) 58.3 | (n) 49.6 |

2. Coordinates

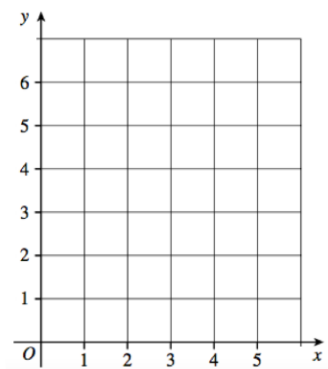
Question 1: Write down the coordinates of the points A, B, C, D, E, F, G and H.



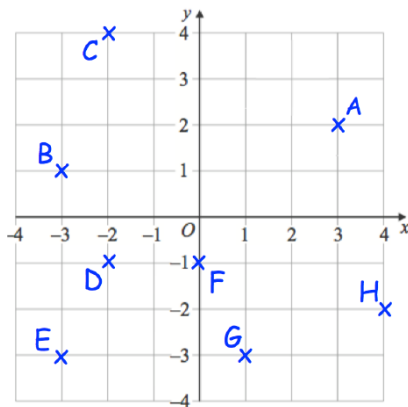
Coordinates

Question 2: Make a copy of the grid shown and then plot the points:

- (a) A (3, 1)
- (b) B (2, 5)
- (c) C (5, 4)
- (d) D (1, 1)
- (e) E (4, 0)
- (f) F (0, 1)
- (g) G (3, 3)
- (h) H (0, 0)

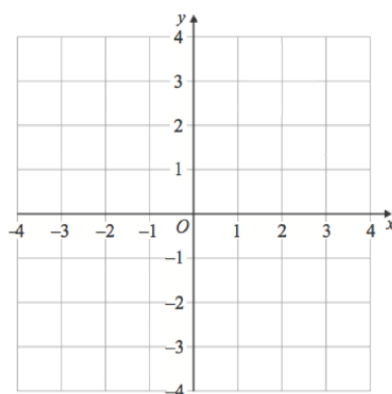


Question 3: Write down the coordinates of the points A, B, C, D, E, F, G and H.



Question 4: Make a copy of the grid shown and then plot the points:

- (a) A (1, 4)
- (b) B (-1, 1)
- (c) C (-3, -4)
- (d) D (2, -1)
- (e) E (-2, 0)
- (f) F (-1, -2)
- (g) G (3, -2)
- (h) H (0, -4)
- (i) I (-2, 2)
- (j) J (-4, -1)
- (k) K (0, 1)



3. Sequences and Patterns

Sequences



Sequences

1. The rule for the sequence below is "multiply by 2 then add 5."

1, 7, 19, 43,.....

What is the next number in this sequence?

2. The rule for the sequence below is "multiply by 3 then add 1."

2, 7, 22, 67,.....

What is the next number in this sequence?

3. The rule for the sequence below is "multiply by 4 then subtract 2."

1, 2, 6, 22,.....

What is the next number in this sequence?

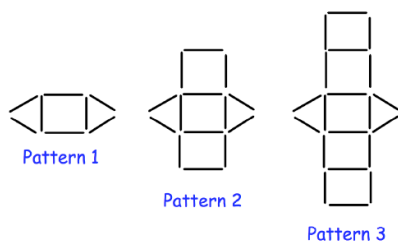
Patterns



Patterns

Question 1: The patterns below are made from sticks

- (a) Complete the table for pattern 4.



Pattern Number	1	2	3	4
Number of Sticks	8	14	20	

- (b) Sketch pattern 5.

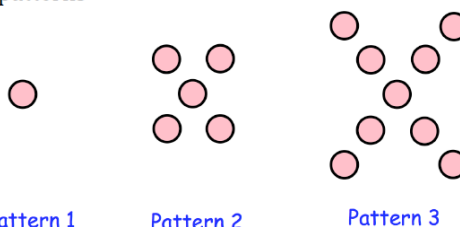
Here is a rule for working out the number of sticks

Multiply pattern number by 6 and add 2

- (c) How many sticks will be in pattern 30?
 (d) How many sticks will be in pattern 120?
 (e) Which pattern will have 80 sticks?
 (f) Which pattern will have 482 sticks?

Question 2: The diagram shows a sequence of patterns

- (a) Draw pattern 4.



- (b) Work out the number of circles in pattern 5.

- (c) Write down a rule for continuing the patterns.

- (d) Explain why you **cannot** make a pattern with exactly 66 circles.

- (e) Complete this rule

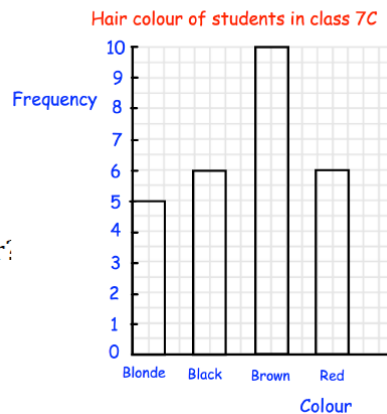
Number of circles = Pattern number $\times$ -

4. Information Handling

Bar Graphs

Question 1: The bar chart shows information about the hair colour of students in 7C.

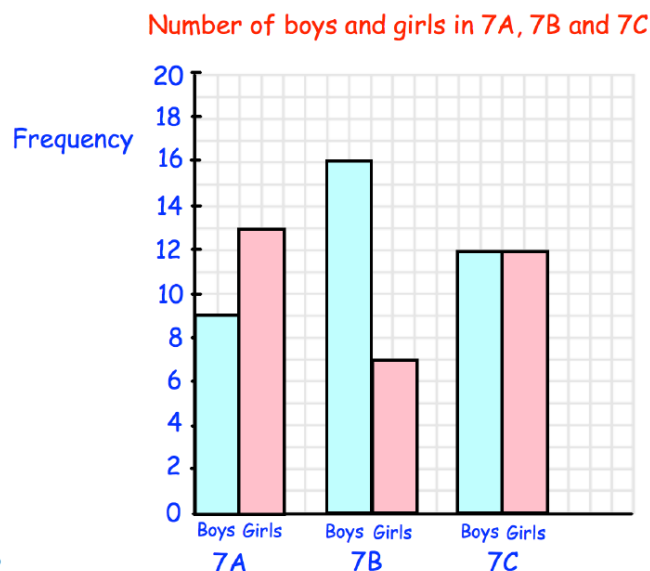
- (a) What is the most common hair colour in 7C?
- (b) How many students had black hair?
- (c) What hair colour is the least popular in 7C?
- (d) How many more students had brown than red hair?
- (e) How many students are in 7C?



Reading Bar Graphs

Question 2: The dual bar chart shows information about the number of boys and girls in three tutor groups, 7A, 7B and 7C.

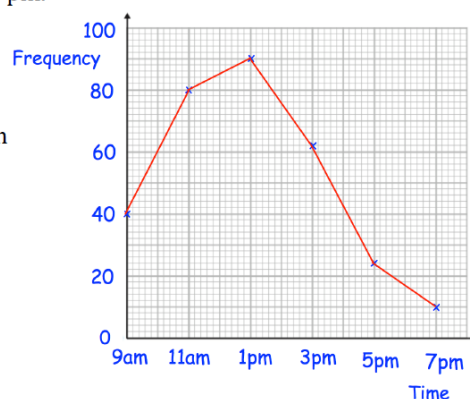
- (a) How many boys are there in 7B?
- (b) Which tutor group has 12 girls?
- (c) Which tutor group has more girls than boys?
- (d) Which tutor group has the same number of boys and girls?
- (e) Which tutor group has the most students?
- (f) How many more girls than boys are there in 7A?
- (g) How many boys are there in Year 7?
- (h) How many students are there in Year 7?



Line Graphs

Question 2: Sally recorded the number of cars in a car park every two hours. She began at 9am and finished at 7pm. The line graph shows her results.

- (a) When were the most cars in the car park?
- (b) How many cars were in the car park at 11am
- (c) At what time were there 24 cars in the car park?
- (d) Estimate the number of cars in the car park at 10am.
- (e) How many less cars were in the car park at 3pm than 1pm?



Line Graphs

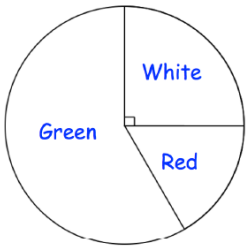
Pie Charts



Pie Charts

Question 1: This pie chart shows the colour of sweets in a bag.

- (a) What is the most common colour of sweet?
- (b) What is the least common colour of sweet?
- (c) What fraction of the sweets are white?

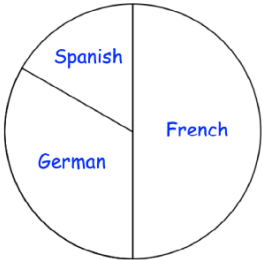


Question 2: The students in a school study one language.
The pie chart shows the languages studied.

- (a) What is the most popular language?
- (b) What is the least popular language?
- (c) What fraction of the students studied French?

There are 300 students that attend the school.

- (d) How many students study French?



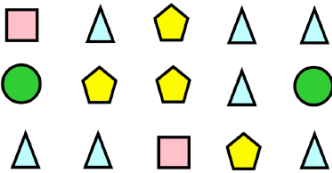
Frequency Tables (Tally Charts)



Tally Charts

Question 1: Copy and complete the tally chart

Shape	Tally	Frequency
Circle		
Pentagon		
Square		
Triangle		



Question 2: Dara has recorded how many tries he scored in 25 rugby matches
Copy and complete the tally chart

1	2	0	0	1
0	1	0	2	0
0	3	0	1	0
0	1	2	1	2
0	1	1	1	0

Number of tries	Tally	Frequency
0		
1		
2		
3		

5. Speed/Distance/Time

Converting from hours and minutes into decimal hours

Question 1: Convert the times from hours/minutes into hours, without a calculator.

- e.g. 1 45 minutes = 0.75 hours
e.g. 2 1 hour 30 minutes = 1.5 hours

- | | | |
|------------------------|------------------------|------------------------|
| (a) 15 minutes | (b) 30 minutes | (c) 45 minutes |
| (d) 20 minutes | (e) 40 minutes | (f) 2 hours 30 minutes |
| (g) 1 hour 15 minutes | (h) 3 hours 45 minutes | (i) 2 hours 40 minutes |
| (j) 5 hours 30 minutes | (k) 7 hours 20 minutes | (l) 4 hours 15 minutes |



*Speed, Distance
and Time*

Speed/Distance/Time Calculations

Question 1: Calculate the average speeds for each of the following, without using a calculator.

- | | |
|---|--|
| (a) A car travels 60 miles in 2 hours | (b) A lorry travels 120 miles in 3 hours |
| (c) A cyclist travels 45 miles in 5 hours | (d) A jogger travels 30km in 4 hours |
| (e) A runner runs 100 metres in 10 seconds | (f) A car travels 195 miles in 3 hours |
| (g) A helicopter travels 425 miles in 5 hours | (h) A helicopter flies 840 miles in 7 hours |
| (i) A dog runs 216 metres in 12 seconds | (j) An airplane travels 984 miles in 6 hours |
| (k) A bird flies 19 miles in 2 hours | (l) A car travels 600km in 8 hours |

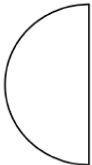
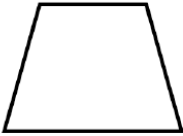
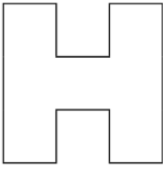
Question 2: Calculate the average speeds for each of the following, without using a calculator.

- | | |
|---|---|
| (a) A car travels 20 miles in 30 minutes | (b) A lorry travels 32 miles in 30 minutes |
| (c) A bird flies 17 kilometres in 30 minutes | (d) A man jogs 2 kilometres in 15 minutes. |
| (e) A helicopter flies 18 miles in 15 minutes | (f) An F1 car travels 32 miles in 15 minutes. |

6. Symmetry

Line Symmetry

Question 1: Draw all the lines of symmetry on each the shapes below

- | | | |
|---|---|--|
| (a)  | (b)  | (c)  |
| (d)  | (e)  | (f)  |
| (g)  | (h)  | (i)  |



Line Symmetry

Rotational Symmetry

Question 1: For each shape below, state the order of rotational symmetry

(a)



(b)



(c)



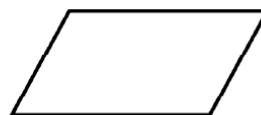
(d)



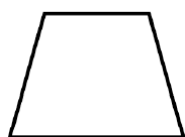
(e)



(f)



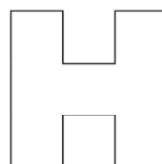
(g)



(h)



(i)



Rotational
Symmetry

Question 2: Here are some road signs.
For each road sign, write down the order of rotational symmetry.

(a)



(b)



(c)



(d)



(e)



Question 3: Here are some flags.
For each flag, write down the order of rotational symmetry

(a)



(b)



(c)



(d)



7. Fractions/Decimals/Percentages

Question 7: Copy and complete this table

Fraction	Decimal	Percentage
$\frac{1}{2}$		
	0.8	
$\frac{2}{3}$		
		30%



Converting
Fractions,
Decimals and
Percentages

Converting between mixed numbers and improper fractions



*Converting
improper
fractions and
mixed numbers*

Question 1: Change these improper fractions into mixed numbers

- (a) $\frac{7}{3}$ (b) $\frac{7}{5}$ (c) $\frac{5}{2}$ (d) $\frac{8}{7}$ (e) $\frac{5}{3}$
- (f) $\frac{10}{3}$ (g) $\frac{23}{2}$ (h) $\frac{11}{4}$ (i) $\frac{11}{8}$ (j) $\frac{9}{4}$
- (k) $\frac{13}{10}$ (l) $\frac{13}{6}$ (m) $\frac{16}{7}$ (n) $\frac{51}{10}$ (o) $\frac{34}{11}$

Question 2: Change these mixed numbers into improper fractions

- (a) $2\frac{1}{5}$ (b) $3\frac{1}{2}$ (c) $1\frac{3}{4}$ (d) $3\frac{2}{3}$ (e) $1\frac{2}{5}$
- (f) $2\frac{4}{7}$ (g) $1\frac{1}{3}$ (h) $2\frac{3}{10}$ (i) $4\frac{3}{4}$ (j) $1\frac{7}{12}$

Fractions of a Quantity



*Fractions of a
quantity*

Question 1: Work out each of the following

- (a) $\frac{1}{2}$ of 10 (b) $\frac{1}{3}$ of 18 (c) $\frac{1}{5}$ of 20 (d) $\frac{1}{4}$ of 24
- (e) $\frac{1}{9}$ of 27 (f) $\frac{1}{10}$ of 160 (g) $\frac{1}{8}$ of 80 (h) $\frac{1}{7}$ of 49
- (i) $\frac{1}{2}$ of 9 (j) $\frac{1}{5}$ of 65 (k) $\frac{1}{12}$ of 72 (l) $\frac{1}{11}$ of 132

Question 2: Work out each of the following

- (a) $\frac{2}{3}$ of 15 (b) $\frac{7}{10}$ of 20 (c) $\frac{2}{5}$ of 30 (d) $\frac{3}{4}$ of 32
- (e) $\frac{3}{5}$ of 45 (f) $\frac{2}{7}$ of 28 (g) $\frac{3}{8}$ of 88 (h) $\frac{3}{10}$ of 120
- (i) $\frac{5}{9}$ of 63 (j) $\frac{13}{20}$ of 60 (k) $\frac{2}{7}$ of 91 (l) $\frac{4}{15}$ of 120

Percentages of an amount



*Percentages of
an amount*

Calculate:

- (a) 20% of 30km (b) 5% of £60 (c) 2% of 600m (d) 30% of 70p
- (e) 3% of \$9000 (f) 40% of 75 seconds (g) 15% of 90 hours (h) 5% of 14kg
- (i) 60% of 30km (j) 30% of £40 (k) 70% of 900cm (l) 20% of 13cm
- (m) 11% of 420m (n) 26% of 4000m (o) 55% of £8 (p) 15% of 340kg

8. Averages - Mean/Median/Mode/Range

Mode

Question 1: Work out the mode for the each of the following

- (a) 5, 6, 6, 7, 8, 10 (b) 1, 1, 1, 4, 6, 8, 12 (c) 5, 5, 7, 7, 7, 8, 8, 9
(d) 5, 7, 3, 5, 8, 9, 10, 2 (e) 8, 3, 3, 4, 6, 8, 13, 3, 18 (f) 12, 14, 15, 17, 15
(g) 2.3, 2.6, 2.8, 2.7, 2.8, 2.7, 2.4, 2.3, 2.1, 2.3 (h) -2, -1, 5, 8, -2, 2, -1, 9, -1, 1, 2, -1



Finding the
Mode

Median

Question 1: Work out the median for the each of the following

- (a) 5, 1, 4, 6, 8 (b) 9, 1, 3, 6, 7, 8, 9 (c) 6, 4, 7, 1, 3, 8, 1, 10
(d) 7, 3, 8, 9, 6, 5 (e) 9, 8, 6, 6, 6, 7, 1, 2, 6, 8 (f) -4, 5, -7, -1, 2, 0, 9
(g) 20, 30, 10, 20, 40, 50, 60, 10, 80, 30 (h) 49, 34, 12, 10, 53, 20, 65, 34, 90, 100, 33
(i) 6.2, 6.8, 6.6, 7.2, 6.4, 7.4, 5.8 (j) 124, 53, 39, 230, 155, 180



Finding the
Median

Mean

Question 1: Find the mean for each of the sets of data below

- (a) 4, 9, 7, 10, 5 (b) 2, 8, 6, 3, 12, 7, 4 (c) 3, 2, 1, 3, 2, 2, 1, 3, 1, 2, 3, 2, 1
(d) 1, 8, 7, 5, 6, 4, 7, 6 (e) 20, 30, 24, 32 (f) 12, 8, 14, 5, 1, 3, 0, 8, 10, 11
(g) 9, -3, -6, 5, 0 (h) 1.4, 2.8, 2.4, 2.5, 2.8, 3.1, 1.1



Finding the
Mean

Range

Question 1: Find the range for each of the following

- (a) 5, 9, 1, 5, 7, 4, 3 (b) 6, 7, 10, 8, 9, 9 (c) 21, 15, 19, 24, 30, 26
(d) 210, 250, 260, 180, 240 (e) 6.2, 7.3, 8.8, 1.5, 4.1 (f) 3, 1, 2, 1, 3, 4, 5, 0, 1
(g) -5, 1, 3, 6, -8, 1 (h) -6, -10, -2, -9 (i) 0, 7, 9, -21, 10, -4
(j) 7, 9, -2, 13, 9, 8, 20, -8, 1 (k) -10, -6, -15, -9, -8, -7, 8, -3

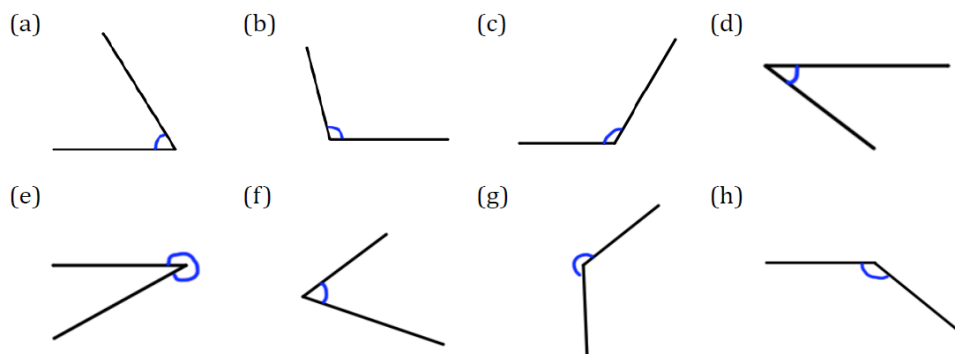


Finding the
Range

9. Angles

Identifying Angles

Question 1: Write down if each angle below is acute, obtuse or reflex.



Types of Angle

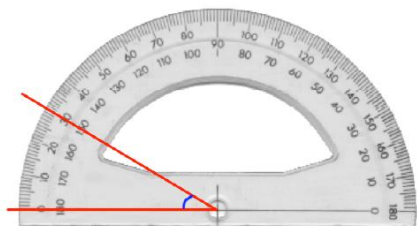
Measuring Angles



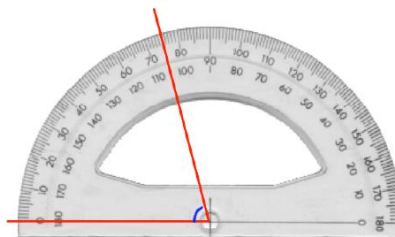
Measuring Angles

Question 1: Write down the size of each angle being measured

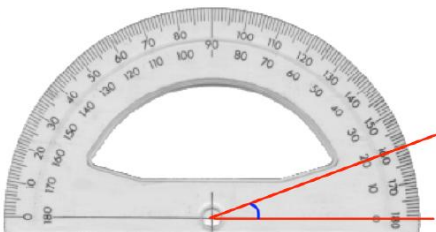
(a)



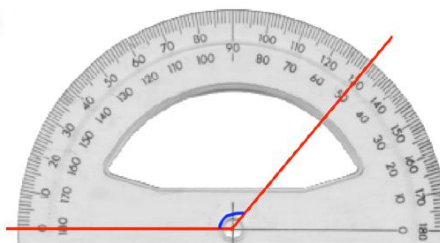
(b)



(c)



(d)



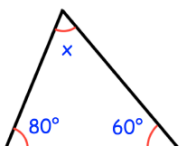
Angles in a Triangle



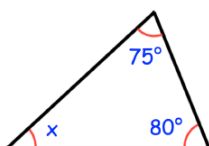
Angles in a Triangle

Question 1: Find the size of each missing angle.

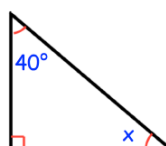
(a)



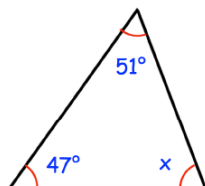
(b)



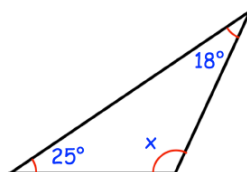
(c)



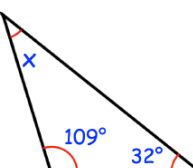
(d)



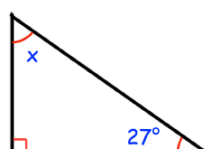
(e)



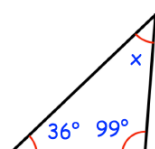
(f)



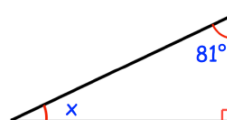
(g)



(h)

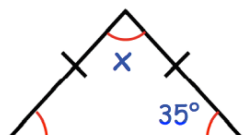


(i)

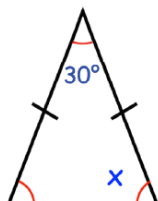


Question 2: Find the size of each missing angle.

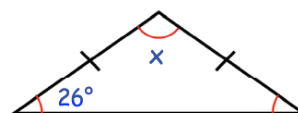
(a)



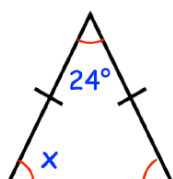
(b)



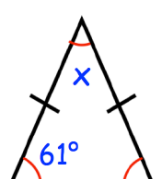
(c)



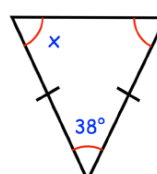
(d)



(e)



(f)



10. Algebra

Question 1: Expand the following brackets

- | | | | |
|------------------|-------------------|------------------|-----------------------|
| (a) $5(y + 3)$ | (b) $4(a + 2)$ | (c) $8(w + 10)$ | (d) $3(x - 7)$ |
| (e) $9(s - 1)$ | (f) $2(8 - t)$ | (g) $7(4 + h)$ | (h) $10(a + 2b + 3c)$ |
| (i) $4(3y + 2)$ | (j) $5(2p - 1)$ | (k) $3(7a + 2)$ | (l) $9(2x - 5)$ |
| (m) $5(4 + 3t)$ | (n) $7(9 - 2c)$ | (o) $8(3w + 1)$ | (p) $9(1 - 4p)$ |
| (q) $11(2k - 5)$ | (r) $20(6a + 5c)$ | (s) $3(15w - 7)$ | (t) $3(9 - 2a)$ |



Breaking
Brackets

Question 2: Expand the following brackets

- | | | | |
|-----------------|------------------|------------------|-------------------|
| (a) $-2(w + 5)$ | (b) $-3(c + 7)$ | (c) $-8(c + 7)$ | (d) $-10(y - 2)$ |
| (e) $-7(g - 3)$ | (f) $-4(2w + 3)$ | (g) $-9(3w - 5)$ | (h) $-9(5x - 1)$ |
| (i) $-5(6 - c)$ | (j) $-6(4 + 3m)$ | (k) $-2(1 + 9c)$ | (l) $-5(8a - 7w)$ |

Question 3: Expand the following brackets

- | | | | |
|------------------|------------------|------------------|-------------------|
| (a) $a(c + 2)$ | (b) $c(d - 3)$ | (c) $a(b + c)$ | (d) $w(8 - y)$ |
| (e) $c(5 + a)$ | (f) $w(a - 9)$ | (g) $y(s + t)$ | (h) $2a(c - 3)$ |
| (i) $5x(y + 8)$ | (j) $3a(2c + 9)$ | (k) $6g(2c - 1)$ | (l) $9k(2 + d)$ |
| (m) $5(2f + 9w)$ | (n) $3y(5p + 2)$ | (o) $2s(t + 1)$ | (p) $-4a(8x - 3)$ |

Question 4: Expand the following brackets

- | | | | |
|-----------------|------------------|------------------|-------------------|
| (a) $a(a + 2)$ | (b) $y(y - 5)$ | (c) $w(a + w)$ | (d) $c(9 - c)$ |
| (e) $p(2p + 5)$ | (f) $2w(3w - 1)$ | (g) $9y(2y + 3)$ | (h) $4c(2a + 5c)$ |

Question 5: Expand and simplify

- | | | |
|-----------------------------|----------------------------|-----------------------------|
| (a) $5(y + 3) + 2(y + 7)$ | (b) $6(2w + 5) + 9(w + 2)$ | (c) $3(y - 2) + 4(2y + 5)$ |
| (d) $7(2g + 3) - 5(g + 2)$ | (e) $6(x - 2) - 4(x - 8)$ | (f) $2(3y - 8) - 5(2y - 1)$ |
| (g) $8(5 + 2m) + 3(5 - 3m)$ | (h) $4(w + 7) - 2(2w + 1)$ | (i) $9(1 + 2y) + 3(3 - y)$ |

Question 1: Expand and simplify

- (a) $(w + 4)(w + 2)$ (b) $(y + 1)(y + 2)$ (c) $(c + 2)(c + 5)$ (d) $(x + 6)(x + 7)$
(e) $(a + 5)(a - 3)$ (f) $(g + 7)(g - 4)$ (g) $(s - 4)(s + 5)$ (h) $(x + 1)(x - 3)$
(i) $(p - 3)(p - 2)$ (j) $(y - 4)(y - 4)$ (k) $(k - 5)(k - 6)$ (l) $(v + 4)(v + 3)$
(m) $(n + 8)(n - 10)$ (n) $(b - 3)(b + 7)$ (o) $(z - 9)(z - 3)$ (p) $(a - 5)(a + 7)$
(q) $(w + 2)(w - 8)$ (r) $(r + 7)(r + 7)$ (s) $(w - 11)(w + 1)$ (t) $(t - 8)(t - 7)$



Breaking
Double
Brackets

Question 1: Factorise the following expressions

- (a) $4x + 6$ (b) $15x + 20$ (c) $9y - 12$ (d) $5x + 15$
(e) $6x - 3$ (f) $4x + 8$ (g) $5y - 25$ (h) $8w + 24$
(i) $10y + 15$ (j) $14w + 21$ (k) $20y - 30$ (l) $27x + 18$
(m) $6 - 4x$ (n) $9 + 12y$ (o) $45 + 60x$ (p) $16y - 32$
(q) $22a + 55$ (r) $100 - 40y$ (s) $6x + 9y$ (t) $4w - 2a$
(u) $25y - 35z$ (v) $8x^2 + 20$ (w) $30y^3 - 15$ (x) $42y + 28x - 56c$



Factorising

Question 2: Factorise the following expressions

- (a) $x^2 + 7x$ (b) $x^2 - 3x$ (c) $y^2 + y$ (d) $w^2 + 9w$
(e) $x^2 - 7x$ (f) $4w^2 + 10w$ (g) $6x^2 - 8x$ (h) $9y^2 - 6y$
(i) $10c + c^2$ (j) $5g - g^2$ (k) $14x^2 + 35x$ (l) $40x^2 - 50x$
(m) $12x^2 + 18x$ (n) $24x^2 - 18x$ (o) $45y^2 + 60y$ (p) $7w^2 + 2w$

Question 3: Factorise the following expressions

- (a) $x^2 + xy$ (b) $a^2 - ab$ (c) $xy + xz$ (d) $ab + ac - ad$
(e) $6c^2 - 4cd$ (f) $10x^2 + 15xy$ (g) $12ab + 18bc$ (h) $8xy + 4y^2$
(i) $8cdf + 10cde$ (j) $7w^2 + 6w + wy$ (k) $8ab^2 - 10ab$ (l) $4xy^2 + 6xy + 2x^2y$
(m) $6mn - 7m^2n$ (n) $11g^2h + 22h^2$

11. Foreign Exchange



Foreign
Exchange

Question 1: Given £1 = 5 złoty convert each of the following into Polish złoty

- (a) £4 (b) £9 (c) £20 (d) £35 (e) £70 (f) £410 (g) £88

Question 2: Given £1 = 5 złoty convert each of the following into UK pounds

- (a) 15 zł (b) 35 zł (c) 250 zł (d) 180 zł (e) 715 zł (f) 900 zł (g) 95 zł

Question 3: Given £1 = 25 Mexican Peso convert each of the following into Pesos

- (a) £4 (b) £20 (c) £25 (d) £40 (e) £37 (f) £66 (g) £360

Question 4: Given £1 = 25 Mexican Peso convert each of the following into UK pounds

- (a) \$75 (b) \$250 (c) \$825 (d) \$4000 (e) \$9200 (f) \$38000 (g) \$1275

Question 5: Given £1 = \$1.50 convert each of the following into US dollars.

- (a) £3 (b) £5 (c) £7 (d) £20 (e) £40 (f) £50 (g) £100

Question 8: Given £1 = ₺4.25 convert each of the following into UK pounds.

- (a) ₺29.75 (b) ₺76.50 (c) ₺110.50 (d) ₺2550 (e) ₺5100 (f) ₺0.85 (g) ₺4.59

Question 9: Given £1 = €1.28 convert each of the following into euros.

- (a) £6 (b) £4.50 (c) £13 (d) £58 (e) £190 (f) £5730 (g) £809

Question 10: Given £1 = €1.28 convert each of the following into pounds.

- (a) €64 (b) €153.60 (c) €1152 (d) €0.32 (e) €44.80 (f) €140.80 (g) €2.24