# Strathaven Academy 



## Homework

- Whole Numbers
- Symmetry
- Decimals
- Statistics


## Whole Numbers

1. There were 9749 Hibs Supporters and 6436 Hearts supporters at a local derby match.
a) How many supporters were there altogether?
b) How many more Hibs than Hearts supporters were there?
2. By the end of 2013, my car had travelled 24781 miles. During 2014 I drove a further 9803 miles. How much had my car travelled altogether by the end of 2014 ?
3. My salary this year is $£ 28954$ which is $£ 2349$ higher than last year. What was my salary last year?
4. A palette holds 1895 tins of soup. How many tins are there in 8 palettes?
5. Nine people won $£ 52389$ in the lottery.

If it is shared equally amongst them, how much will each receive?
6. Find the value of $6 \times 4 \times 276$.
7. Tennis balls are packed into boxes of 6. If there are 2000 balls
a) how many boxes can be filled?
b) how many tennis balls are left over?
8. Calculate
a) 4107
b) $7612 \times 48$
$\times 85$

## Whole Numbers

9. Find:-
a) $324 \times 10$
b) $84000 \div 100$
C) $56 \times 1000$
d) $452 \times 100$
e) $761 \times 1000$
f) $62900000 \div 100$
10. Find:-
a) $32 \times 30$
b) $145 \times 2000$
c) $605 \times 600$
d) $8600 \div 20$
e) $40000 \div 800$
f) $70200000 \div 6000$
11.a)
b)

A machine makes 8600 chocolate bars an hour. How many does it make in 30 hours?

The machine is updated and now makes 270000 in 30 hours. How many more bars does the machine make per hour?
12. A recycling truck follows the same route every day.

- From the depot to a superstore 12 miles away, then back to the depot.
- It then travels from the depot to another shopping centre 13 miles away and back.

One day the mileometer on the truck reads 23670 miles.
 What would the reading be 30 days later?
13. Find a $8+4 \times 3$ b $6-20 \div 4$.
14. Re-write the following and insert brackets to make each of the equations correct :-
a $9-5 \times 3=12$
b $\quad 12 \times 9-6=36$
c $\quad 6+4 \times 10-10=0$.

## Symmetry

1. How many lines of symmetry do these shapes have?
a

b

c

2. Copy the figure shown onto squared paper and complete it so that the dotted line is an axis of symmetry.

3. Which, if any, of these shapes have half turn symmetry?
a

b

c

4. State what kind of turn symmetry $\left(\frac{1}{2}, \frac{1}{3}, \ldots\right)$ these shapes have.
a

b

c


## Symmetry

5. Copy the shape below onto squared paper and rotate it $180^{\circ}$ around the dot.

6. Make a copy of this shape in the centre of a page and surround it completely to show that this shape will "tile the plane".

7. Which of the following shapes would tile the plane ?

b

$C$


## Decimals

1. Round to 1 decimal place:
a) 3.87
b) 0.972
2. Round to 2 decimal places:
a) 0.4565
b) 2.996
3. Round to 3 decimal places:
a) 11.0955
b) 0.9998
4. Round each number to 1 figure accuracy and give an approximate value for the following:
a) $199 \times 19$
b) $3656 \times 196$
C) $39 \times 409$
d) $8705 \div 33$
e) $416876 \div 3781$
f) $4489 \div 8091$
5. a) $3 \cdot 74 \times 10$
b) $0 \cdot 0075 \times 1000$
c) $70 \cdot 309 \times 100$
d) $1.86 \times 1000$
6. a) $26 \cdot 3 \div 10$
b) $7 \cdot 9 \div 100$
C) $132 \div 1000$
d) $52 \div 100$
7. a) $12 \cdot 4 \times 20$
b) $0 \cdot 0641 \times 5000$
C) $22.9 \times 600$
d) $0.35 \times 2000$
8. a) $65.1 \div 30$
b) $4218 \div 600$
C) $75 \div 5000$
d) $1.5 \div 500$
9. The volume of a bottle of perfume is 0.02 litres. What is the volume of 400 bottles?
10. 5000 staples weigh 150 g . Calculate the weight of one staple.
11. Two tables are placed together to form a larger one.

The first table is 67.4 cm long and the second table is 56.85 cm long.
What is the total length?
12. A puzzle costs $£ 7.90$. How much will 6 puzzles cost?
13. A cup of coffee costs $£ 1.85$.
a) How much will I have to pay for 7 cups?
b) How much change will I get from $£ 20$ ?
14. 8 staplers cost $£ 26$. How much does each stapler cost?

## Bodmas

1. a) $5 \times 4-8$
b) $6 \times 3-5$
c) $13-2 \times 4$
d) $10+2 \times 7$
2. a) $1+6 \times 5$
b) $20-10 \div 5$
c) $19+3 \times 2$
d) $28-14 \div 2$
3. a) $3 \times(10-3)$
b) $(2+4) \times 8$
c) $20 \div(12-8)$
d) $(5+4) \times 3$
4. a) $(10-5) \times(4+7)$
b) $(15+10) \div(7-2)$
5. a) $28-10+12$
b) $40+12 \times 2-7$
6. a) $30 \div 5+4 \times 8$
b) $9 \times 4-16 \div 2$
7. a) $4+70 \div 10 \times(1+5)$
b) $7+(6 \times 5+3)$
8. a) $12 \times 2+(27 \div 3-4)$
b) $3+6 \times(5+4) \div 3-7$
9. a) $9-5 \div(8-3) \times 2+6$
b) $150 \div(6+3 \times 8)-5$
10. a) $7.18-2.1 \times 3$
b) $5.04+8.4 \div 7$

## Statistics - Averages

1. Find the range of these numbers :- $94,36,65,32,95,29,47,22,25$.
2. Determine the mode for this currency list :-
£3, £4, £3, £5, £4, £3, £3, £4, £7, £4, £7, £4, £7.
3. Find the median temperature :- $\quad 2^{\circ} \mathrm{C},-2^{\circ} \mathrm{C}, 1^{\circ} \mathrm{C}, 6^{\circ} \mathrm{C},-5^{\circ} \mathrm{C}, 7^{\circ} \mathrm{C}, 12^{\circ} \mathrm{C}, 14^{\circ} \mathrm{C}, 8^{\circ} \mathrm{C},-9^{\circ} \mathrm{C}$.
4. Calculate the mean amount :-

$$
£ 0 \cdot 50, £ 0 \cdot 60, £ 0 \cdot 80, £ 0 \cdot 50, £ 1 \cdot 00, £ 0 \cdot 70, £ 1 \cdot 10, £ 0 \cdot 40
$$

5. 



Mary and Joe's father promised to buy them a new game controller if both of them scored an average (mean) of $85 \%$ or more in their first five maths tests. Mary scored $68 \%, 97 \%, 95 \%, 83 \%$ and $87 \%$ in her tests.

Joe got $92 \%, 84 \%, 72 \%, 86 \%$ and $81 \%$ in his.
Should they get the new controller? (Explain)!
6. Shown is the money earned by two boys washing cars one evening.

| Alan $£ 2$ | £4 | £2 | £2 | £2 | £5 | £3 | £2 | £6 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Dave £1 | £3 | £3 | £4 | £1 | £2 | £3 | £3 | £4 |


a Write down the modal amount earned by each boy.
b Give a reason why it is unfair to compare their earnings by using the mode.
7. Here are the prices quoted by ten computer shops to repair a broken PC.


> £45 £60 £70 £75 £90 £78 £72 £155 £80 £45
a Find the median and the mean price quoted.
b Why should the mode not be used in a case like this ?
8. The mean cost of five pairs of trainers is $£ 52$.

Four of the pairs are priced $£ 55, £ 48, £ 54$ and $£ 49$.
What does the 5 th pair cost?


## Statistics - Graphs and Tables

1. A survey was carried out at a garden centre over one week, when shoppers were asked to name their favourite garden bird.
a How many chose the Blackbird?
b How many more chose Sparrow than Chaffinch?

c How many people were asked altogether ?
2. The line graph shows the number of emails sent by students Arif (A) and Sonya (S).

a On which day did they send the exact same number of Emails ?
b On day 6, who sent more Emails? How many more?
c Overall, who sent more Emails? Explain!
3. In a supermarket survey shoppers were asked to name their favourite quick meal . A sample of their responses is listed.

| Pasta | Pizza | Pasta | Pasta | Sausages |
| :--- | :--- | :--- | :--- | :--- |
| Fish | Pizza | Pizza | Chicken | Fish |
| Pizza | Pasta | Fish | Fish | Chicken |
| Pasta | Pasta | Sausages | Pizza | Pizza |
| Pizza | Fish | Chicken | Chicken | Pizza |

Copy and complete this Frequency Table.

| MEAL | Tally Marks | FREQUENCY |
| :--- | :--- | :--- |
| Pizza |  |  |
| Pasta |  |  |
| Sausages |  |  |
| Fish |  |  |
| Chicken |  |  |

## Statistics - Graphs and Tables

4. The Leisure Centre surveyed a group of pupil's favourite activities.

The results are listed.

| Football | Football | Swimming | Football |
| :--- | :--- | :--- | :--- |
| Swimming | Gymnastics | Swimming | Football |
| Gymnastics | Swimming | Football | Basketball |
| Football | Swimming | Basketball | Basketball |
| Swimming | Football | Swimming | Football |

Show this information in a Frequency Table.
Use the information in the Frequency Table to draw a Bar Graph.
5. The table below shows the time taken to heat a beaker of water using a Bunsen Burner.

| Time (minutes) | Temperature $\left({ }^{\circ} \mathbf{C}\right)$ |
| :---: | :---: |
| 0 | 10 |
| 1 | 20 |
| 2 | 30 |
| 3 | 50 |
| 4 | 60 |
| 5 | 60 |
| 6 | 70 |
| 7 | 80 |
| 8 | 80 |
| 9 | 90 |
| 10 | 100 |

Plot the information from the table on a Line Graph.

# Strathaven Academy 

## Level 3 - Unit 1

## Revise and Review

- Whole Numbers
- Symmetry
- Decimals
- Statistics

This section provides further examples that may be used to revise prior to the Unit 1 Test or for consolidation and review as required on completion of the unit.

## Whole Numbers

1. Write out the number 2040800 in words.
2. Write these numbers using figures :-
(a) one hundred thousand and thirty
(b) 10.5 million.
3. Try these questions mentally :-
(a) $18 \times 10$
(b) $45 \times 100$
(c) $1000 \times 432$
(d) $23 \times 20 \times 30$
(e) $780 \div 20$
(f) $23 \times 30$
(g) $821 \times 40$
(h) $230000 \div 1000$
(i) $39000 \div 300$
(j) $4900 \div 700$
(k) $4963000 \div 700$
(k) A fishing trip company stocks 320 jars of worms. Each jar contains 30 worms. How many worms in total does the company stock?
(I) On a fish farm 23400 fish are kept in 30 tanks.

If each tank has the same number of fish, how many fish are in each tank?


## Show all working for question 4 to 6 .

4. (a) At the cup final the attendance was: Rovers 12829 supporters, United 13482 supporters.
(i) What was the total attendance?
(ii) How many more United supporters were there?
(b) Seven of the United team were being paid $£ 8435$ each.

How much is this in total?
(c) Six Rovers players were being paid a total of $£ 45810$.

If they were paid equal amounts, how much were they paid each?

5. (a) Boy band BLoo are buying a new tour bus which costs $£ 183850$.
Round this number to the nearest :-
(i) $£ 100$
(ii) $£ 1000$
(iii) $£ 10000$
(b) The band are paying over 48 months.

Round each number to 1 figure accuracy and give an estimate for each monthly payment.
(c) The bus can seat 36 passengers.

How many trips will the bus have to make to transport all 226 tour crew?

6. John has a CD collection.

When he puts them in piles of two,
three or four he has one left over.
He has none left when he puts them in piles of seven.
What is the least number of records John can have?


## Symmetry

1. Write down how many lines of symmetry are in each of these shapes :-
(a)

(b)

(c)

(d)

2. Copy each of the following shapes neatly, and complete each one such that the dotted line is a line of symmetry.
(a)

(b)

(c)

3. Which, if any, of these shapes have half-turn symmetry?
(a)

(b)

(c)

(d)

4. (a) For each shape in question 3 , say what kind of turn symmetry it has, $\left(\frac{1}{2}, \frac{1}{3}\right.$, etc).
(b) State the order of each shape from question 3.
5. Copy each shape and give each a half turn around the dot.
(a)

(b)

(c)

6. (a) Make a copy of the tile shown.
(b) Draw twelve congruent tiles to "tile the plane".

7. Which of the following tiles will not cover the plane.
(a)

(b)

(c)

(d)


## Decimals

1. What does the zero stand for in each number :-
(a) 5.07
(b) 111.901
(c) 0.9815
(d) $5 \cdot 1904$
2. Which numbers are the arrows pointing to :-
(a)

(b)

3. Round to one decimal place :-
(a) 0.849
(b) 5.7911
(c) 99.501
(d) $10 \div 6$
4. Do the following mentally and write down the answer :-
(a) $21.72+5.48$
(b) 6-4.67
(c) $2.63 \times 5$
(d) $5 \cdot 964 \div 7$
(e) $0.61 \times 10$
(f) $7.821 \times 100$
(g) $1000 \times 0.3247$
(h) $4.32 \times 200$
5. A 5 metre length of cable is cut into 3 strips.

The first strip was 3.42 m .
The second strip was 0.75 m .


How long was the third strip.
6. Use a calculator and then round to one decimal place.
(a) A barrel holds $140 \cdot 63 l$ of water. How much would 17 barrels hold?
(b) Thirteen railway cars have total length 164.2 metres. What is the length of one
(c) A field with area 1875 metres is fenced into four equal section.

What is the area of each section?

## Statistics 1

1. Calculate the range and the mean of :-
(a) $12,11,14,14,16,21$ and 10
(b) $8.8,8.7,7.9$,
$8,9 \cdot 1,8 \cdot 6$
and $7 \cdot 7$.
2. In a swimming competetion the following times were recorded :-
18.7 secs, 22.4 secs, 19.7 secs, 20.1 secs,
20.3 secs, 18.9 secs, 21.3 secs.


How many swimmers were faster the mean time?
3. Mr. Evans the orchard manager kept a record of the weight of apples picked each day (in kg).
(a) Organise the data into a frequency table.
(b) How many days were more than 24 kg picked?


| 20 | 24 | 22 | 27 | 19 |
| :--- | :--- | :--- | :--- | :--- |
| 22 | 22 | 23 | 25 | 21 |
| 20 | 24 | 23 | 23 | 26 |
| 21 | 23 | 24 | 21 | 20 |
| 22 | 22 | 23 | 23 | 22 |

4. The last six months of Alana and Betty's mobile phone bills are shown on the line graph.
(a) How much did Alana pay in :-
(i) December
(ii) March ?
(b) Between which two consecutive months was Betty's bill the same?
(c) Alana and Betty's parents found the bills and went ballistic.
Which month were the bills found ? Explain.
(d) Calculate the mean bill for each girl.
cost
(£)


## Statistics 2

1. Calculate the mean for each set of data :-
(a) $3,8,4,2,10,7,8$
(b) $50,60,52,58,54,56$
(c) $1 \cdot 3,2 \cdot 6,3 \cdot 2,4 \cdot 1,5,4 \cdot 8,4,1 \cdot 9,0 \cdot 1,2$
(d) the first ten prime numbers.
2. Find the median for each set of data :-
(a) $1,3,5,6,8,11,14$
(b) $16,22,23,25,31,40,61,63$
(c) $4,1,14,12,6,7,11,13,9$
(d) $5,8,21,12,5,16,33,12,15,9$.
3. Find the mode for each set of data :-
(a) $1,1,2,3,5,8,13,21,34,55$
(b) $3,2,1,8,4,5,9,2,7,6,0$,
(c) $1 \cdot 7,2 \cdot 3,1 \cdot 6,3,2 \cdot 3,3 \cdot 7,2 \cdot 9$,
(d) $A, C, F, G, H, Y, T, E, D, D, G, H, G$.
4. Find the range for each set of data in question 3(a) to (c).
5. Find the mean, median, mode and range of each set of data :-
(a) $10,14,15,15,16,19,22,23,27,29,30$
(b) $46,31,66,73,83,43,16,66$
(c) All the prime numbers between 30 and 50 .
6. 



The mean weight of 4 boxes is 300 kg .
Three of the boxes each weigh 85 kg .
What is the weight of the fourth box ?
7. The mean cost for 12 people to hire a bus was to be $£ 15$. Unfortunately, some people did not turn up for the bus trip. Each of those who went on the trip ended up paying $£ 22 \cdot 50$. How many must have turned up?


## Answers

## Whole Numbers

1. a Two million,forty thousand, eight hundred
2. a 100030 b 10500000
3. a 180 b 4500 c 432000 d 13800
$\begin{array}{llllllll}\text { e } & 39 & \text { f } & 690 & \text { g } & 32840 & \text { h } & 230 \\ \text { i } & 130 & \text { j } & 7 & \mathrm{k} & 7090 & \mathrm{l} & 9600\end{array}$
m 780
4. a (i) 26311 (ii) 653
b £59045 c $£ 7635$
5. a
(i) $£ 183900$
(ii) $£ 184000$
(iii) $£ 180000$
b $£ 4000$ c 7 trips
6.49

## Symmetry

1.a 1
b 0
c 1
d 10
2. check diagrams
3.a/b \& c
4. a $\frac{1}{6}, \frac{1}{4}, \frac{1}{2}, \frac{1}{7}$
b $6,4,2,7$
5. -6 .
7. a/b \& d

## Decimals



## Statistics 1

1. a 14 (11) b 8.4 (1.4)
2.4
2. a Weight Tally Freq

| 19 | I | 1 |
| :---: | :---: | :---: |
| 20 | III | 3 |
| 21 | III | 3 |
| 22 | III \| | | 6 |
| 23 | III \| | 6 |
| 24 | III | 3 |
| 25 | \| | 1 |
| 26 | \| | 1 |
| 27 | \| | 1 |

## Statistics 2


b 3
4. a (i) $£ 40 \quad$ (ii) $£ 15$
b April and May
c February
d ALANA £40 BETTY $£ 40$

