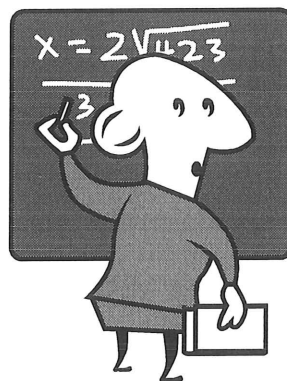




CUMBERNAULD ACADEMY

Faculty of Mathematics & Numeracy



3rd Level Upper

Block 1 - Homework booklet

Multiply by 10, 100 and 1000

1. Write down the answers to the following :-

- | | | | |
|-----------------------|------------------------|------------------------|------------------------|
| (a) 22×10 | (b) 10×39 | (c) 104×10 | (d) 10×340 |
| (e) 2020×10 | (f) 34×100 | (g) 100×40 | (h) 101×100 |
| (i) 2010×100 | (j) 8100×300 | (k) 21×1000 | (l) 1000×70 |
| (m) 200×1000 | (n) 3050×1000 | (o) 1000×1000 | (p) 5000×3000 |

2. There are 1000 ml (millilitres) in 1 litre.

- How many ml in :-
- | | | |
|----------------|----------------|-------------------|
| (a) 4 litres | (b) 30 litres | (c) 12 litres |
| (d) 150 litres | (e) 100 litres | (f) 1000 litres ? |

3. During Summer three thousand fly's are produced every day in a forest.

How many fly's would be produced in July?

**Divide by 10, 100 and 1000**

1. Write down the answers to the following :-

- | | | | |
|---------------------------|--------------------------|-----------------------|-------------------------|
| (a) $20 \div 10$ | (b) $300 \div 10$ | (c) $14\ 000 \div 10$ | (d) $200\ 000 \div 10$ |
| (e) $1\ 000\ 000 \div 10$ | (f) $400 \div 100$ | (g) $8000 \div 100$ | (h) $5400 \div 100$ |
| (i) $99\ 000 \div 100$ | (j) $120\ 400 \div 100$ | (k) $8000 \div 1000$ | (l) $42\ 000 \div 1000$ |
| (m) $870\ 000 \div 1000$ | (n) $909\ 000 \div 1000$ | (o) $1000 \div 1000$ | |

2. There are 1000 ml (millilitres) in a litre.

- How many litres in :-
- | | | |
|---------------|----------------|-----------------------|
| (a) 50 000 ml | (b) 100 000 ml | (c) a million litres? |
|---------------|----------------|-----------------------|

3. A virus grows at a steady rate and produces 900 million bacteria in 10 hours.

How many bacteria will it produce in one hour?

**Multiplying whole numbers by a single digit**

1. Copy the following and complete the calculation :-

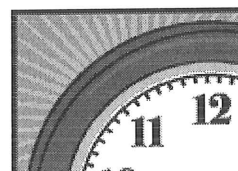
- | | | | |
|--|--|--|---|
| (a) $\begin{array}{r} 571 \\ \times 3 \\ \hline \end{array}$ | (b) $\begin{array}{r} 435 \\ \times 7 \\ \hline \end{array}$ | (c) $\begin{array}{r} 708 \\ \times 9 \\ \hline \end{array}$ | (d) $\begin{array}{r} 5555 \\ \times 8 \\ \hline \end{array}$ |
|--|--|--|---|

2. Rewrite each if these in the above form and complete the calculation :-

- | | | | |
|--------------------|--------------------|---------------------|--------------------|
| (a) 207×6 | (b) 824×8 | (c) 1057×4 | (d) 5×888 |
|--------------------|--------------------|---------------------|--------------------|

3. Show all your working in answering the following questions :-

- (a) Mrs. Brown is paid £1408 a month. How much would she earn in 9 months?
 (b) How many hours in a week?
 (c) How many seconds in 4 hours?
 (d) Find $8 \times 4 \times 56$.

4. Find $10 \times 9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$.

Dividing Whole Numbers by a single digit

1. Copy the following and complete the calculation :-

(a) $7 \overline{)3808}$

(b) $5 \overline{)9265}$

(c) $6 \overline{)7434}$

(d) $8 \overline{)5216}$

2. Set down in the manner shown above and complete the calculation :-

(a) $7277 \div 7$

(b) $5175 \div 9$

(c) $\frac{4506}{6}$

(d) $\frac{6016}{8}$

3. Show all your working in answering the following questions :-

(a) How many weeks are in 343 days?

(b) Golf balls are packed with 6 in each box.

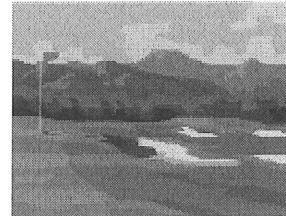
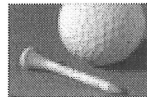
How many boxes are needed for 258 balls?

(c) A nine hole golf course has length 1973 yards.

Find the average length of each hole.

(d) A pack of golf tees contains 8 tees.

How many packs are needed for 2248 tees?



4. Find the remainder each time :-

(a) $412 \div 7$

(b) $555 \div 4$

(c) $1000 \div 3$

(d) $4000 \div 7$

5. Marbles are packed into packets of nine.

(a) How many packets are needed for 3871 marbles?

(b) How many marbles are left over?

**Multiplying and Dividing by Multiples of 10, 100 and 1000**

1. Try to do the following mentally :-

(a) 32×30

(b) 41×60

(c) 50×321

(d) 404×90

(e) 12×300

(f) 42×400

(g) 500×21

(h) 800×312

(i) 9021×30

(j) 312×7000

(k) $2000 \div 20$

(l) $4400 \div 400$

(m) $80400 \div 200$

(n) $1 \text{ million} \div 2000$

(o) $10 \text{ million} \div 50000$



2. Calculate each of the following (not necessarily mentally) :-

(a) 224×30

(b) 512×80

(c) 40×875

(d) 123×200

(e) 414×300

(f) 6000×41

(g) 20200×40

(h) 2012×800

(i) $986 \times 20 \times 50 \times 40$

(j) $20 \times 30 \times 87 \times 50 \times 10$

3. A box contains 50 matches.

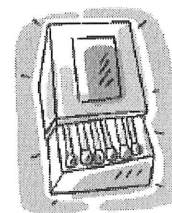
How many matches are in :- (a) 50 boxes (b) 231 boxes?

4. An equal amount of 3400 marbles have to be put into 200 jars.

How many marbles will be in each jar?

5. A jar hold 340 sweets. A box hold 20 jars. A crate holds 30 boxes.

How many sweets would be in 20 crates?



Multiplying Whole numbers (up to 3 digits)

1. Set down and complete :-

$$\begin{array}{r} \text{(a)} \quad 248 \\ \times 26 \\ \hline \dots\dots\dots \\ \dots\dots\dots 0 \\ \hline \dots\dots\dots \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \quad 546 \\ \times 59 \\ \hline \dots\dots\dots \\ \dots\dots\dots 0 \\ \hline \dots\dots\dots \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \quad 704 \\ \times 72 \\ \hline \dots\dots\dots \\ \dots\dots\dots \\ \hline \dots\dots\dots \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \quad 555 \\ \times 55 \\ \hline \dots\dots\dots \\ \dots\dots\dots \\ \hline \dots\dots\dots \\ \hline \end{array}$$

2. Set down in the manner shown above and find :-

(a) 204×24

(b) 157×83

(c) 941×19

(d) 3241×237

Alternatively, use grid multiplication to find the answers to the above questions.**Dividing by whole numbers up to 2 digits**

(a) $476 \div 14$

(b) $891 \div 33$

(c) $1020 \div 85$

(d) $1104 \div 23$

Rounding to 1 figure of accuracy

Round each number to 1 figure of accuracy:

1. 71

2. 78

3. 129

4. 291

5. 781

6. 1995

7. 4500

8. 7299

9. 18901

10. 23559

11. 1234567

12. Sound travels through water at a speed of 1460 metres per second. Round this number to one figure of accuracy.
13. A fossil was discovered and was carbon dated at 127891 years old. Round this number to one figure of accuracy.

Round each number in the following questions to 1 figure of accuracy then give an estimate for the sum - e.g. $620 \div 19 = 600 \div 20 = 30$

(a) 59×19

(b) 402×99

(c) 379×320

(d) $894 \div 38$

(e) $512 \div 22$

(f) $1961 \div 197$

Rounding - Decimal Places

1. Round these numbers to the number of decimal places shown in the brackets :-

(a) 5.13 (1)

(b) 7.851 (1)

(c) 8.736 (2)

(d) 6.3492 (2)

(e) 4.8912 (3)

(f) 3.2915 (3)

(g) 47.999 24 (3)

(h) 3.999 88 (3).

2. Use your calculator to do the following and give your answer correct to 2 decimal places :-

(a) $4.36 + 6.447$

(b) 23.82×16.35

(c) $37.1 \div 68.3$

(d) $16 \div 7$.

3. Do these calculations and round your answer to the number of decimal places shown in the brackets :-

(a) 2.58×0.247 (3)

(b) 0.394×6.555 (2)

(c) 6.274×1.983 (3)

(d) $0.58 \div 3.267$ (3)

(e) $16.27 \div 19.443$ (1)

(f) $0.7 \times 0.19 \times 0.87$ (4).

Add/Subtract basic Decimals

1. Do the following mentally :-

- (a) $3.7 + 1.2$ (b) $5.2 + 3.9$ (c) $18.6 - 3.5$ (d) $23.6 - 15.8$ (e) $15.8 - 1.01$
 (f) $5.9 - 4.09$ (g) $0.96 - 0.4$ (h) $54.8 - 8.91$ (i) $0.4 - 0.17$ (j) $12.1 - 7.84$

2. Use 'chimney sums' to answer the following:

- (a)
$$\begin{array}{r} 47.5 \\ + 35.2 \\ \hline \end{array}$$
 (b)
$$\begin{array}{r} 8.17 \\ + 5.96 \\ \hline \end{array}$$
 (c)
$$\begin{array}{r} 1.38 \\ - 1.27 \\ \hline \end{array}$$
 (d)
$$\begin{array}{r} 19.38 \\ - 9.89 \\ \hline \end{array}$$

 (e) $22.4 + 9.9$ (f) $4 - 2.3$ (g) $11.7 - 3.45$ (h) $5.8 - 4.92$

Multiply/Divide Decimals by a single digit whole number

1. Write down the answers to the following :-

- (a)
$$\begin{array}{r} 4.34 \\ \times 4 \\ \hline \end{array}$$
 (b)
$$\begin{array}{r} 8.27 \\ \times 7 \\ \hline \end{array}$$
 (c)
$$\begin{array}{r} 8.78 \\ \times 6 \\ \hline \end{array}$$
 (d)
$$\begin{array}{r} 119.38 \\ \times 9 \\ \hline \end{array}$$

 (e) 5.7×8 (f) 42.3×4 (g) 135.9×5 (h) 7×37.521

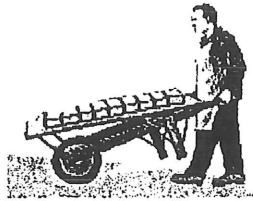
2. Find :- (a) $35.7 \div 7$ (b) $57.06 \div 6$ (c) $0.072 \div 8$

3. Show all your working for the following questions :-

- (a) Nine bricks have a total length of 2.61 metres.
What is the length of 1 brick ?

- (b) Three kegs of beer hold 3072.6 litres.
How much beer does one keg hold ?

- (c) Find :- (i) a third of 19.8 (ii) a ninth of 51.66
 (iii) a sixth of 6.06 (iv) a fifth of 0.7

**Multiply/Divide Decimals by 10, 100 and 1000**

1. Write down the answers to the following :-

- (a) 8.4×10 (b) 9.8×10 (c) 7.62×10 (d) 18.71×10
 (e) 6.41×100 (f) 0.91×100 (g) 4.021×100 (h) 0.0054×100
 (i) 5.213×1000 (j) 0.8765×1000 (k) 1.0041×1000 (l) 4.2×1000

Write down the answers to the following :-

- (a) $28.6 \div 10$ (b) $19.8 \div 10$ (c) $7.62 \div 10$ (d) $187.1 \div 10$
 (e) $64.1 \div 100$ (f) $10.91 \div 100$ (g) $4.2 \div 100$ (h) $0.54 \div 100$
 (i) $521.3 \div 1000$ (j) $0.8 \div 1000$ (k) $1.004 \div 1000$ (l) $9 \div 1000$

Multiplying decimals

1. Calculate :-

- (a) 0.8×6 (b) 0.8×60 (c) 0.8×600 (d) 0.8×6000
 (e) 0.8×0.6 (f) 0.08×0.6 (g) 0.008×0.6 (h) 0.0008×0.6
 (i) $(0.7)^2$ (j) 0.09×0.3 (k) 0.03×0.3 (l) 0.006×0.7
 (m) $0.08 \times 30\,000$ (n) 400×0.0005 (o) $0.3 \times 0.4 \times 0.5$ (p) $20 \times 0.8 \times 0.6$
 (q) $60 \times 0.1 \times 700$ (r) $0.8 \times 50 \times 0.8$ (s) $0.7 \times 500 \times 0.3$ (t) $0.6 \times 5000 \times 0.4$.

2. Claire buys 400 bubble gums at £0.07 each. What does this cost her ?



3. One evening last winter, 3 centimetres of snow fell every hour.

What depth of snow fell during the 15 minutes it was snowing ?

4. Try these trickier examples :-

- (a) 0.03×0.03 (b) 0.06×0.07 (c) 0.08×0.09 (d) 0.05×0.04

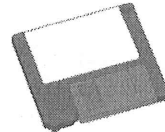
Dividing decimals

1. Find :-

- (a) $6 \div 0.3$ (b) $36 \div 0.9$ (c) $100 \div 0.4$ (d) $2.4 \div 0.8$
 (e) $4.55 \div 0.5$ (f) $22.33 \div 0.7$ (g) $6 \div 0.03$ (h) $5.2 \div 0.04$
 (i) $0.54 \div 0.006$ (j) $0.045 \div 0.009$ (k) $0.0174 \div 0.003$ (l) $12 \div 20$
 (m) $45 \div 500$ (n) $56 \div 7000$ (o) $720 \div 8000$ (p) $350 \div 5000$.

2. 3000 floppy disks can store 4710 megabytes.

How many megabytes can be stored on one such disk ?



3. A small tub holds 0.08 litres of pineapple yogurt.

How many tubs can be filled from a container which contains :-

- (a) 3.2 litres (b) 16 litres (c) 40 litres (d) 0.64 litres ?

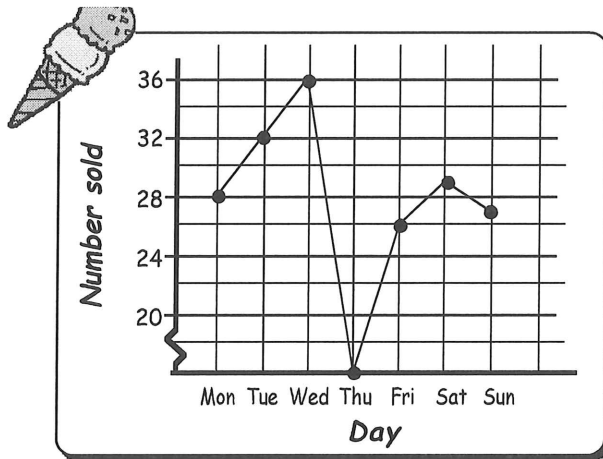


4. A box of 3000 Xmas cards weighs 4.2 kg, not including the weight of the box itself.

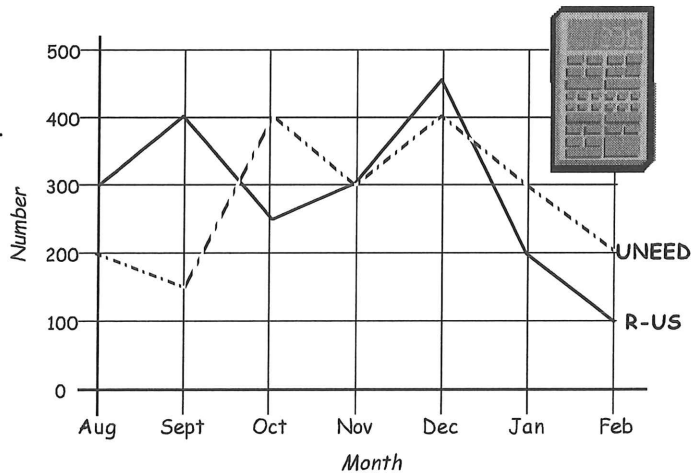
Work out the weight of one card, (a) in kg's. (b) in grams.

Graphs and Charts

1. The line graph show the sales of Tony's ice-cream one week in July.
 - (a) How many ice-cream's did Tony sell on
 - (i) Monday (ii) Friday
 - (iii) Saturday (iv) Sunday ?
 - (b) Tony was ill one day and could not drive his van to work.
What day was Tony ill ?
 - (c) What day do you think was the hottest day ? Explain.
 - (d) What were the total number of ice-creams sold that week.
 - (e) What was the mean number of ice-creams sold per day over the seven days ?



2. The comparative line graph shows the sales of calculators from two different companies CALC-R-US and CALCUNEED.
 - (a) How many calculators did CALCUNEED sell in :-
 - (i) August
 - (ii) September
 - (iii) January ?
 - (b) One company had a big advertising campaign between September and October.
Which company ? Explain.
 - (c) Calculate the mean sales of each company per month.
 - (d) Which company do you think had better sales ? Explain.



3. Three companies computer sales are as shown.
Draw a comparative line graph showing the sales information of the three companies.

	Jan	Feb	Mar	Apr	May	Jun
JDK	100	200	300	200	300	400
IPS	300	250	150	200	400	450
HB	350	500	400	250	300	325

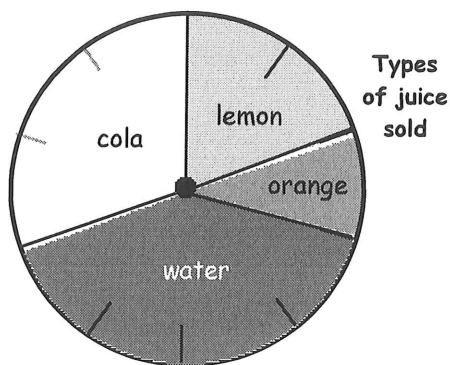
4. The disco recorded the number of crates sold :-

Crates	water	beer	alcho-pop	orange
number	20	12	6	9

Draw and label a neat horizontal bar graph to represent the information in the table.

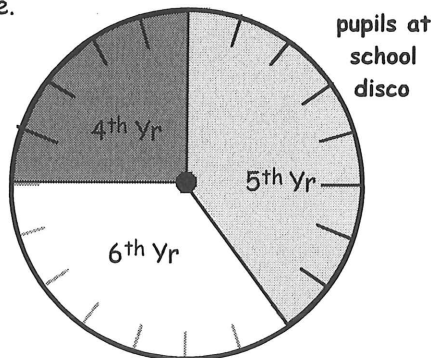
Pie Charts

1. The pie chart shows the results of school tuck shop juice sold.



- (a) What percentage does each section represent ?
- (b) What percent of the sales were:-
 - (i) Lemon
 - (ii) Water
 - (iii) Cola and orange

2. This pie chart shows this years senior school disco attendance.



- (a) What percentage of the pupils were
 - (i) 4th year
 - (ii) 5th year
 - (iii) 6th year ?
- (b) If 480 pupils attended the disco, write the attendance of each year group.
- (c) Last year, of the 480 in attendance half were sixth year, an eighth were fourth year and the rest were fifth year.

Copy or trace the outline of this pie chart.
Show last years disco attendance.

You need a protractor for question 3.

3. At local cup final, a crowd 720 people attended. 180 supported Rovers, 270 supported United and the rest of the spectators were there just to see a good game !



Draw a pie chart to show this information.
(hint : remember there are 360° in a pie chart).

Mean and Range

1. Find the mean and range of :-

- (a) 2, 3, 6, 5, 2, 9, and 8
- (b) 41, 37, 53, and 45
- (c) 13, 12, 12, 15, 14 and 15
- (d) 3.1, 2.5, 3.8, 3.4 and 3.9.

2. In the first six months of the church lottery, £6360 in prizemoney was paid out.

How much on average was paid each month ?



3. Josh is a computer games whizkid.

He completed each level of DEATHGAME in the following times (in minutes) :-

- 8.6, 9.5, 8.8, 7.9, 10.1, 8.9, 8.1, 8.3 and 9.

What was his mean time per level ?

