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Introduction

This set of notes has been arranged to assist Primary Education students revise the basic skills in arithmetic.

All students are required to sit and gain at least 80% in a basic skills test in Mathematics in order to be enrolled in Primary Education Mathematics courses. If a student does not gain a mark of 80% or more they are required to attend a 20 hour course where the basic skills are taught. This course is run by the Maths Study Centre.

As Mathematics is a key learning area it is most important that teachers have a good understanding of the basic concepts in Primary Arithmetic.

These notes include topic by topic revision and sample exam papers.
**Basic Operations.**

Addition and subtraction and multiplication.

1) \[ 126 + \]
   \[ 351 \]
   \[ 477 \]

2) \[ 258 + \]
   \[ 397 \]
   \[ 655 \]

3) \[ 2459 - \]
   \[ 1684 \]
   \[ 775 \]

4) \[ 257 \times \]
   \[ 3 \]
   \[ 771 \]

5) \[ 542 \times \]
   \[ 23 \]
   \[ 1626 \]
   \[ 10840 \]
   \[ 11466 \]

Exercise:

1) \[ 259 \times 3 \]
2) \[ 351 \times 24 \]
3) \[ 8352 \times 36 \]
4) \[ 2064 \times 28 \]
5) \[ 80039 \times 46 \]

Answers: 1) 777 2) 8424 3) 300672 4) 57792 5) 3681794
Division

279 ÷ 3

\[ \begin{array}{c}
\text{93} \\
3 \sqrt{279}
\end{array} \]

4065 ÷ 5

\[ \begin{array}{c}
\text{813} \\
5 \sqrt{4065}
\end{array} \]

Exercise

1) 42 ÷ 7

2) 672 ÷ 4

3) 5296 ÷ 8

4) 5924 ÷ 4

5) 8256 ÷ 8

6) 4963 ÷ 8

7) 3691 ÷ 4

Answers:

1) 6  2) 168  3) 662  4) 1481  5) 1032  6) 620 \( \frac{3}{8} \)  7) 922 \( \frac{3}{4} \)
Order of operations

It may have been some time since you have thought about order of operations as the calculator automatically does this for you. (Financial calculators do not usually do this however)

\[ 3 + 4 \times 5 = 3 + 20 = 23 \]

Notice the multiplication is done before addition and subtraction.

The order of operations can be explained by BODMAS

B  Brackets must be done first
O  Outside brackets
D  Division and multiplication must be done next working from left to right
M  
A  Addition and subtraction must be done next working from left to right
S  

Examples:

1) \( 5 + 42 \div 7 = 5 + 6 = 11 \)

2) \( 6 \div 2 + 3 \times 5 = 3 + 15 = 18 \)

3) \( 8 + 3 \times (5 + 8 - 2) = 8 + 3 \times 11 = 8 + 33 = 41 \)

4) \( 12 \div 4 + 6 \times 2 - 10 = 3 + 12 = 15 \)

5) \( 24 + 5(28 - 5 \times 4) = 24 + 5 \times 8 = 24 + 40 = 64 \)
Exercise:
1) $28 \div 7 - 1$

2) $32 - 20 \div 5$

3) $24 \div 6 + 8 \times 3$

4) $40 - 3(20 \div 5 + 3 \times 2)$

5) $18 \div 3 \times 2$

Answers:
1) 3  2) 28  3) 28  4) 10  5) 12
Basic Operations with Fractions

Equivalent fractions

One whole is represented by the rectangle below.

The whole may be divided into 2 equal parts

\[ 1 = \frac{2}{2} \]

One whole = 2 halves

Dividing this shape again we have 4 equal parts.

\[ 1 = \frac{2}{2} = \frac{4}{4} \]

\[ \frac{1}{2} = \frac{2}{4} \]

Shade half of the rectangle below.

Note that 2 of the 4 equal parts have now been shaded.

Hence \[ \frac{1}{2} = \frac{2}{4} \]
Dividing this shape again we have 8 equal parts.

\[
\begin{array}{cccc}
| & | & | & | \\
| & | & | & |
\end{array}
\]

\[
\frac{1}{2} = \frac{2}{4} = \frac{4}{8}
\]

Shade half of the rectangle above.

Note that 4 of the 8 equal parts have now been shaded.

Hence \( \frac{1}{2} = \frac{2}{4} = \frac{4}{8} \)

Using the pattern above equivalent fractions may be derived.

1) \( \frac{2}{3} = \frac{?}{9} \) (multiply 3 by 3 to get 9 on the denominator so multiply 2 by 3 also on the numerator)

2) \( \frac{3}{4} = \frac{?}{8} \)

3) \( \frac{4}{5} = \frac{?}{20} \)

4) \( \frac{3}{5} = \frac{12}{?} \)
5) \[
\frac{8}{12} = \frac{?}{3}
\]

6) \[
\frac{20}{60} = \frac{4}{?}
\]

7) \[
\frac{3}{7} = \frac{?}{28}
\]

Solutions:
1) 6  2) 6  3) 16  4) 20  5) 2  6) 12  7) 12
Addition and Subtraction of fractions.

(i) Like denominators

\[
\frac{1}{8} + \frac{5}{8}
\]

Shade 1 square which represents one eighth of the rectangle

\[
\frac{1}{8} + \frac{5}{8} + \frac{8}{8}
\]

Shade 5 squares which represent five eighths of the rectangle

If you add these together you have now shaded six eighths of a rectangle. Hence:

\[
\frac{6}{8} = \frac{3}{4}
\]

Rule: When you add or subtract fractions with like denominators you add or subtract the numerators, then simplify your answer if necessary.
Exercise:

1) \( \frac{1}{7} + \frac{5}{7} \)

2) \( \frac{3}{11} + \frac{7}{11} \)

3) \( \frac{5}{9} - \frac{3}{9} \)

4) \( \frac{9}{13} - \frac{4}{13} \)

5) \( \frac{2}{3} + \frac{1}{3} \)

6) \( \frac{4}{9} + \frac{2}{9} \)

7) \( \frac{7}{9} + \frac{4}{9} \)

8) \( \frac{11}{12} + \frac{5}{12} \)

Answers: 1) \( \frac{6}{7} \quad 2) \frac{10}{11} \quad 3) \frac{2}{9} \quad 4) \frac{5}{13} \quad 5) \frac{3}{3} = 1 \quad 6) \frac{6}{9} = \frac{2}{3} \quad 7) \frac{11}{9} = \frac{12}{9} \quad 8) \frac{17}{12} = \frac{1.5}{12} \)
(ii) Addition and subtraction of fractions with unlike denominators.

If the denominators are not the same the fractions must first be changed to have like denominators.

\[
\frac{5}{8} + \frac{1}{4} = \frac{5}{8} + \frac{2}{8} = \frac{7}{8}
\]

(Notice from line 2 to line 3 equivalent fractions have been used so that the fractions have like denominators)

Exercise:

1) \(\frac{3}{4} + \frac{1}{6}\)

2) \(\frac{4}{9} + \frac{2}{3}\)

3) \(\frac{7}{9} - \frac{1}{3}\)

4) \(\frac{8}{9} + \frac{2}{3}\)

5) \(\frac{11}{12} - \frac{3}{4}\)

Answers: 1) \(\frac{7}{12}\) 2) \(\frac{10}{9} = 1 \frac{1}{9}\) 3) \(\frac{4}{9}\) 4) \(\frac{14}{9} = 1 \frac{5}{9}\) 5) \(\frac{1}{6}\)
Further addition and subtraction of fractions.

\[
\frac{1}{8} + \frac{5}{8} = \frac{1}{8} + \frac{5}{8}
\]

Example:

\[
= \frac{6}{8} = \frac{3}{4}
\]

Exercise:

1) \(2\frac{1}{8} + \frac{3}{8}\)

2) \(1\frac{2}{3} + 2\frac{2}{3}\)

3) \(2\frac{5}{6} + 1\frac{2}{3}\)

4) \(3\frac{3}{4} + 1\frac{5}{8}\)

5) \(2\frac{1}{2} - \frac{1}{4}\)

Answers: 1) \(2\frac{1}{2}\) 2) \(4\frac{1}{3}\) 3) \(4\frac{1}{2}\) 4) \(5\frac{3}{8}\) 5) \(2\frac{1}{4}\)
**Multiplication of fractions.**

\[
\frac{1}{2} \times \frac{4}{9}
\]

Draw a rectangle and shade and shade four ninths of it.

Now shade half of the shaded area.

You will find that you have now shaded two ninths of the rectangle.

You have shaded \( \frac{1}{2} \) of \( \frac{4}{9} \).

Hence \( \frac{1}{2} \times \frac{4}{9} = \frac{2}{9} \).

Notice this answer may also be found by cancelling the 2 and the 4.

(Note this may only be done when multiplying fractions)

Exercise:

1) \( \frac{3}{8} \times \frac{5}{9} \)

2) \( \frac{4}{11} \times \frac{7}{12} \)

3) \( \frac{5}{12} \times \frac{8}{9} \)

4) \( 1\frac{2}{3} \times \frac{7}{10} \)

Answers: 1) \( \frac{5}{24} \) 2) \( \frac{7}{33} \) 3) \( \frac{10}{27} \) 4) \( \frac{5}{3} \times \frac{7}{10} = \frac{7}{6} = 1\frac{1}{6} \)
Decimals

In order to understand decimals you need to understand place value.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>tens</th>
<th>Units</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td></td>
<td>2×10 + 4×1</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>2</td>
<td>3×100 + 5×10 + 2×1</td>
<td>352</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>6</td>
<td>4×1000 + 8×100 + 6×10 + 9×1</td>
<td>4869</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>4</td>
<td>2×100 + 0×10 + 4×1</td>
<td>201</td>
</tr>
</tbody>
</table>

Decimals follow the same concept for place value.

<table>
<thead>
<tr>
<th>units</th>
<th>.</th>
<th>tenths</th>
<th>hundredths</th>
<th>thousandths</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.</td>
<td>2</td>
<td></td>
<td></td>
<td>1×1 + 2×1/10 = 1.2</td>
</tr>
<tr>
<td>0</td>
<td>.</td>
<td>6</td>
<td>4</td>
<td></td>
<td>0×1 + 6×1/10 + 4×1/100 = 0.64</td>
</tr>
<tr>
<td>4</td>
<td>.</td>
<td>0</td>
<td>6</td>
<td></td>
<td>4×1 + 0×1/10 + 6×1/100 = 4.06</td>
</tr>
<tr>
<td>0</td>
<td>.</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>0×1 + 5×1/10 + 8×1/100 + 4×1/1000 = 0.584</td>
</tr>
<tr>
<td>0</td>
<td>.</td>
<td>0</td>
<td>6</td>
<td></td>
<td>0×1 + 0×1/10 + 6×1/100 = 0.06</td>
</tr>
<tr>
<td>0</td>
<td>.</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>0×1 + 0×1/10 + 0×1/100 + 9×1/1000 = 0.009</td>
</tr>
</tbody>
</table>

Using the concepts developed in the table above, write the following as decimals:

\[
\frac{2}{10} = 0.2
\]

\[
\frac{8}{10} = 0.8
\]

\[
\frac{2}{100} = 0.02
\]

\[
\frac{19}{100} = 0.19
\]

\[
\frac{19}{1000} = 0.019
\]
1) Write as decimals:

(i) \( \frac{9}{10} \)

(ii) \( \frac{8}{100} \)

(iii) \( \frac{19}{1000} \)

(iv) \( \frac{7}{1000} \)

Express as a fraction in its simplest form:

0.7 = \( \frac{7}{10} \)

0.6 = \( \frac{6}{10} \) = \( \frac{3}{5} \)

0.08 = \( \frac{8}{100} \) = \( \frac{2}{25} \)

2) Express as a fraction in its simplest form:

(i) 0.4

(ii) 0.19

(iii) 0.018

(iv) 0.006
Express as a mixed number in its simplest form:

\[ 2 \frac{3}{10} = 2.3 \]

\[ 4 \frac{17}{100} = 4.17 \]

\[ 2.4 = 2 \frac{4}{10} = 2 \frac{2}{5} \]

\[ 8.16 = 8 \frac{16}{100} = 8 \frac{4}{25} \]

3) Write as a mixed number in its simplest form:

(i) 6.4

(ii) 1.75

(iii) 2.84

(iv) 4.5

(v) 3.6
Solutions:

1) (i) 0.9  (ii) 0.08  (iii) 0.019  (iv) 0.007

2) (i) \(\frac{2}{5}\)  (ii) \(\frac{19}{100}\)  (iii) \(\frac{9}{500}\)  (iv) \(\frac{3}{500}\)

3) (i) \(\frac{2}{5}\)  (ii) \(1\ \frac{3}{4}\)  (iii) \(2\ \frac{21}{25}\)  (iv) \(4\ \frac{1}{2}\)  (v) \(3\ \frac{3}{5}\)
Basic operations with decimals.

1) Addition and subtraction.

1) $2.546 + 4.123$

\[
\begin{array}{c}
2.546 \\
+ 4.123 \\
\hline
6.659
\end{array}
\]

2) $12.462 - 3.513$

\[
\begin{array}{c}
12.462 \\
- 3.513 \\
\hline
8.949
\end{array}
\]

3) $8.63 - 3.169$

\[
\begin{array}{c}
8.630 \\
- 3.169 \\
\hline
5.461
\end{array}
\]

When adding or subtracting decimals just keep the decimal points under each other and use the normal rules for addition and subtraction.

Notice in example 3 a zero has been inserted after the 3 in 8.630 to ensure that the 9 underneath is subtracted from 10 (Keep the place value).

Exercise:

1) $2.674 + 3.548$

2) $12.485 + 3.582$

3) $13.457 - 2.563$

4) $14.23 - 8.548$

5) $11.25 - 6.486$

Answers: 1)6.222  2)16.067  3)10.894  4)5.682  5)4.764
**Multiplying decimals.**

<table>
<thead>
<tr>
<th>units</th>
<th>.</th>
<th>tenths</th>
<th>hundredths</th>
<th>thousandths</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.</td>
<td>2</td>
<td></td>
<td></td>
<td>$1 \times 1 + 2 \times \frac{1}{10}$</td>
</tr>
</tbody>
</table>

Recall the expansion of a decimal.

$1.2 = 1 \text{ unit} + 2 \text{ tenths}$

$1.2 = 1 + \frac{2}{10}$

$1.2 \times 10 = 1 \times 10 + \frac{2}{10} \times 10$

$= 10 + 2$

$= 12$

Notice that both of the digits have moved one place in place value 1 space to the left.

If we multiplied 1.2 by 100 the answer would be 120 as each would move 2 places in place value to the left.

*(If this is confusing you need to go to a basic textbook on decimals to recall the facts)*

**Exercise:**

1) $3.468 \times 100$

2) $13.43 \times 10$

3) $8.387 \times 1000$

4) $23.58 \div 10$

5) $256.93 \div 100$

**Answers:** 1) 346.8  2) 134.3  3) 8387  4) 2.358  5) 2.569
**Significant Figures and Rounding**

Round to the nearest ten:

<table>
<thead>
<tr>
<th>Number</th>
<th>Rounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>3684</td>
<td>3680</td>
</tr>
<tr>
<td>2087</td>
<td>2090</td>
</tr>
<tr>
<td>158</td>
<td>160</td>
</tr>
</tbody>
</table>

Round to the nearest hundred:

<table>
<thead>
<tr>
<th>Number</th>
<th>Rounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>161</td>
<td>200</td>
</tr>
<tr>
<td>1215</td>
<td>1200</td>
</tr>
</tbody>
</table>

Round to 3 significant figures:

<table>
<thead>
<tr>
<th>Number</th>
<th>Rounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>2162</td>
<td>2160</td>
</tr>
<tr>
<td>2084</td>
<td>2080</td>
</tr>
<tr>
<td>13 256</td>
<td>13 300</td>
</tr>
<tr>
<td>1.452</td>
<td>1.45</td>
</tr>
<tr>
<td>0.006792</td>
<td>0.00679</td>
</tr>
</tbody>
</table>

(count 3 digits from the left)

(the zero is included as it is in between the other digits)

(the zeros must be added to keep the place value)

(count digits from the left)
Exercise:

1) Round to the nearest 10:
   (i) 456  (ii) 53226  (iii) 2145  (iv) 863

2) Round to the nearest hundred:
   (i) 247  (ii) 567  (iii) 2 768  (iv) 12 341

3) Round to 2 significant figures:
   (i) 2156  (ii) 35671  (iii) 0.346  (iv) 2.472

4) Round to 3 significant figures:
   (i) 12 346  (ii) 2 489  (iii) 2.3479  (iv) 7.2061
   (v) 0.02476  (vi) 0.004391  (vii) 0.04052

Solutions:

1) (i) 460  (ii) 53230  (iii) 2150  (iv) 860
2) (i) 200  (ii) 600  (iii) 2 800  (iv) 12 300
3) (i) 2200  (ii) 36000  (iii) 0.35  (iv) 2.5
4) (i) 12 300  (ii) 2 490  (iii) 2.35  (iv) 7.21
   (v) 0.0248  (vi) 0.00439  (vii) 0.0405
Percentages

20% means 20 per hundred.

\[
\frac{1}{5} = \frac{20}{100} = 20\%
\]

To change \(\frac{1}{5}\) to a percentage just multiply by 100.

\[
\frac{1}{5} \times 100 = 20\%
\]

Similarly to change 0.2 to a percentage

\[
\frac{1}{5} = \frac{2}{10} = 0.2
\]

\(0.2 \times 100 = 20\%

1) Complete the table:

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>30%</td>
</tr>
<tr>
<td>0.7</td>
<td>a)</td>
</tr>
<tr>
<td>0.28</td>
<td>b)</td>
</tr>
<tr>
<td>0.03</td>
<td>c)</td>
</tr>
<tr>
<td>0.046</td>
<td>d)</td>
</tr>
<tr>
<td>1.24</td>
<td>e)</td>
</tr>
<tr>
<td>0.137</td>
<td>f)</td>
</tr>
</tbody>
</table>

2) Complete the table

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\frac{3}{5})</td>
<td>a)</td>
</tr>
</tbody>
</table>
3) Complete the following table:

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Fraction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08</td>
<td>a)</td>
<td>b)</td>
</tr>
<tr>
<td>c)</td>
<td>4/10</td>
<td>d)</td>
</tr>
<tr>
<td>e)</td>
<td>f)</td>
<td>24%</td>
</tr>
<tr>
<td>g)</td>
<td>h)</td>
<td>80%</td>
</tr>
<tr>
<td>0.64</td>
<td>i)</td>
<td>j)</td>
</tr>
<tr>
<td>0.45</td>
<td>k)</td>
<td>l)</td>
</tr>
<tr>
<td>m)</td>
<td>n)</td>
<td>65%</td>
</tr>
<tr>
<td>0.5</td>
<td>o)</td>
<td>p)</td>
</tr>
</tbody>
</table>

4) a) Find 20% of 1 hour

\[
\frac{20}{100} \text{ of 60 minutes} = \frac{20 \times 60}{100 \times 1} = 12 \text{ min}
\]
b) Find 27% of 1m in cm

c) Find 56% of 3m in cm

d) Find 85% of 3km in m

5) What percentage is:

a) 30 minutes of 1 hour?

\[ \frac{30}{60} \times \frac{100}{1} = 50\% \]

(Note: both measurements must be changed to the same name—both to minutes in this case)

b) 86cm of 2m

c) 350m of 2km

6) a) A car is bought for $25000 and sold for $15000.

What is the loss as a percentage of the cost price?

Loss=$25000-$15000

= $10000

Percentage= \[ \frac{10000}{25000} \times \frac{100}{1} = 40\% \]

b) Sen bought a table for $800 and sold it for $1000.

Find his profit as a percentage of the cost price.

c) Max bought a campervan for $45000 and sold it for $36000.
Find his loss as a percentage of the cost price.

7) a) If John spent $40 on tickets and this was 20% of his allowance, what was his allowance?

\[
\begin{align*}
20\% \text{ allowance} &= $40 \\
1\% \text{ allowance} &= $2 \quad (40 \div 20)
\end{align*}
\]

Allowance = $200

b) Amanda paid a 30% deposit of $120 on a ticket.

What was the full price of the ticket?

c) 8% of Jeff's allowance is $24.

What is Jeff's allowance?

**Solutions:**

1: a) 70%  b) 28%  c) 3%  d) 4.6%  e) 124%  f) 13.7%

2: a) 60%  b) 25%  c) 75%  d) 70%  e) 90%  f) 46%

3: a) \(\frac{2}{25}\)  b) 8%  c) 0.24  d) 40%  e) 0.24  f) \(\frac{6}{25}\)

g) 0.8  h) \(\frac{4}{5}\)  i) \(\frac{16}{25}\)  j) 64%  k) \(\frac{9}{20}\)  l) 45%

m) 0.65  n) \(\frac{13}{20}\)  o) \(\frac{1}{2}\)  p) 50%

4: b) 27cm  c) 168cm  d) 2550m

5: b) 43%  c) 17\(\frac{1}{2}\)%

6: b) 25%  c) 20%
General Review (1)

1) $456 + 238$

2) $2456 - 1068$

3) $2000 - 300$

4) $6 \times 8 - 24 \div 8 + 9$

5) $400 + 2(16 \div 8 + 6 \times 3 - 4^2)$

6) $\frac{35 \times 18 \times 64}{8 \times 21 \times 6}$

7) Write as a number: Three million, eighteen thousand and five.

8) Multiply the sum of 15 and 25 by the difference of 9 and 6.

9) $32 \times 17 = ? \times 34$ Find the value of ?

10) $\sqrt{11 + ?} = 6$ Find the value of ?

11) $(8 + ?)^2 = 144$ Find the value of ?

12) Write 3824 to the nearest hundred.
13) \( \frac{4088}{8} \)
14) \( \frac{378}{9} \)

15) \( \frac{16 \times 40 \times 21}{35 \times 24} \)

16) \( \frac{81 \times 12 \times 25}{45 \times 30} \)

17) \( 324 + 162 + 8 + 72 + 904 \)

18) \( 38071 - 2164 \)

19) \( \frac{759}{6} \)

20) Find \( \frac{2}{3} \) of 270m.

Solutions

1) 694  2) 1388  3) 1700  4) 54  5) 408  6) 40  7) 3018005
8) 120  9) 16  10) 25  11) 4  12) 3800  13) 511
14) 42  15) 16  16) 18  17) 1470  18) 35907
19) \( \frac{126}{2} \)  20) 180m
1) Find $\frac{3}{5}$ of $30$.

2) Find the value of $? \text{ if } \frac{4}{5} = \frac{?}{30}$

3) Find the value of $? \text{ if } \frac{24}{27} = \frac{?}{9}$

4) What is $\frac{3}{8}$ of $2m$ in cm?

5) Write $\frac{3}{4}$ as an improper fraction.

6) Write $\frac{21}{4}$ as a mixed number.

7) Which is largest $\frac{4}{7}$ or $\frac{5}{8}$?

8) Find the sum of $\frac{2}{5}$ and $\frac{7}{15}$

9) Evaluate $2\frac{2}{3} + 3\frac{5}{12}$. 

General Review (2)
10) Evaluate $\frac{5}{6} - \frac{1}{4}$

11) Find the value of $\frac{3}{5} + \frac{1}{2} + \frac{7}{10}$

12) Find the product of 48 and 2109.

13) Find the difference between 4003 and 268.

14) Max gave one third of his pizza to Ben, one quarter of the pizza to Elias and he ate the rest himself. What fraction of the pizza did Max eat?

Solutions:

1) $18$  2) 24  3) 8  4) 75cm  5) $\frac{11}{4}$
6) $5\frac{1}{4}$  7) $\frac{5}{8}$  8) $\frac{13}{15}$  9) $6\frac{1}{12}$  10) $\frac{7}{12}$
11) $1\frac{4}{5}$  12) 101232  13) 3735  14) $\frac{5}{12}$
Pass mark: 40
Total marks available: 50
Time allowed: 45 minutes
The use of calculators is not permitted.

Question 1  (12 marks)

(i) Alvin paid $64 for ten tickets. How much would each ticket cost assuming they were all the same price?

(ii) \(1408 \times 63\)
(iii) If $\sqrt{62} - ? = 7$ find ?.

(iv) Write the number 2 010 008 in words.

(v) 1722 ÷ 7

(vi) 13×18 = 39×? find ?
Question 2 (12 marks)

(i) Write these decimals in order of size - largest to smallest.

0.079  0.790  0.879  0.07  0.768

(ii) \(26.89 + 128.079\)

(iii) \(43.64 - 18.104\)
(iv) Round 5.0482 to 2 decimal places.

(v) Round $28.47 to the nearest ten cents.

(vi) Evaluate $69 \times 3.542 + 31 \times 3.542$

**Question 3**  (10 marks)

(i) Write $2 \frac{3}{7}$ as an improper fraction.
(ii) Leif had a box of pencils. He gave \( \frac{1}{3} \) of the pencils to his sister, \( \frac{1}{6} \) to his younger brother and \( \frac{2}{9} \) of the pencils to his cousin. There were still 25 pencils remaining in the box. How many pencils were there in the box originally?

(iii) Evaluate \( \frac{5}{6} - \frac{1}{8} \)
(iv) In a swimming squad of 125 people, three out of five were female. How many were female?

(v) Write these fractions in order from greatest to least:

\[
\frac{2}{5} \quad \frac{1}{4} \quad \frac{3}{10} \quad \frac{9}{20}
\]
Question 4 (10 marks)

(i) Express 6.5% as a decimal.

(ii) Winnie was given a 20% discount on a coat costing $120. How much did she pay for the coat?

(iii) Jason bought a bike for $250 and sold it for $170. Find his loss as a percentage of the cost price.
(iv) Write as percentages:

\[ a) \frac{3}{5} \]

\[ b) 0.084 \]

(v) What percentage is 30 minutes of 2 hours?

**Question 5** (6marks)

a) Suyee wanted to paint one of her bedroom walls. Her wall measured 3.15m by 2m.

What was the area of this wall?
b) How much will it cost to paint the wall if the painter charges $20/m^2$?
Pass mark: 40

Total marks available: 50

Time allowed: 45 minutes

The use of calculators is not permitted.

**Question 1** (12 marks)

(i) Chloe bought 3 pumpkins for $5.40. How much would 1 pumpkin cost?

(ii) $3406 \times 67$
(iii) If \( \sqrt{95} - ? = 8 \) find ?.

(iv) Write the number 3 004 015 in words.

(v) \( 3255 \div 7 \)
(vi) $17 \times 64 = 34 \times ?$ find $?$

Question 2  (12 marks)

(i) Write these decimals in order of size - largest to smallest.

| 0.089 | 0.890 | 0.889 | 0.091 | 0.809 |

(ii) $36.89 + 48.178$
(iii) 23.64 - 7.015

(iv) Round 2.0876 to 2 decimal places..

(v) Write down the multiples of 4 between 13 and 26.

(vi) Evaluate $8 \times 4.557 + 2 \times 4.557$
Question 3  (10 marks)

(i) Write $2\frac{3}{8}$ as an improper fraction.

(ii) Tono won a box of CDs. He kept $\frac{3}{8}$ of the CDs, gave $\frac{1}{4}$ to his younger brother and $\frac{3}{16}$ of the CDs to his cousins. There were still 15 CDs remaining in the box. How many CDs were there in the box originally?
(iii) Evaluate \( \frac{5}{8} - \frac{1}{6} \)

(iv) Find two thirds of two and a half hours?

(v) Write these fractions in order from greatest to least:

\[
\frac{4}{5} \quad \frac{1}{2} \quad \frac{1}{10} \quad \frac{17}{20}
\]
Question 4  (10 marks)

(i) Express 1.39% as a decimal.

(ii) Byron paid a deposit of $215 for his ticket. This was in fact 20% of the full price. What was the full price of the ticket?

(iii) Jason bought a campervan for $40 000 and sold it for $24 000. Find his loss as a percentage of the cost price.
(iv) Write as percentages:

\[
a) \frac{13}{20}
\]

\[
b) 0.037
\]

(v) What percentage is 45 minutes of 2 hours?
Question 5  (6marks)  a) (i) Find the area of the following figure.

(ii) Find the perimeter of the figure above.

(ii) If all of the dimensions of the figure were doubled, calculate the new perimeter of the figure above.
Pass mark: 40
Total marks available: 50
Time allowed: 45 minutes
The use of calculators is not permitted.

Question 1  (12 marks)

(i) Owen paid $36 for 4 tickets to a movie. How much did each ticket cost assuming they were of equal value?

(ii) 3604 × 46
(iii) If \( \sqrt{80} - ? = 8 \) find ?.

(iv) Write the number 2 400 008 in words.

(v) \( 2184 ÷ 8 \)

(vi) \( 13 \times 42 = 26 \times ? \) find ?
Question 2  (12 marks)

(i) Write these decimals in order of size - smallest to largest.

0.078  0.870  0.789  0.07  0.798

(ii) 26.894 + 18.17

(iii) 43.54 - 8.026
(iv) Round 2.0849 to 2 decimal places.

(v) $0.00456 \times 1000$

(vi) Evaluate $103 \times 4.647 - 3 \times 4.67$

Question 3  (10 marks)

(i) Write $2 \frac{3}{5}$ as an improper fraction.
(ii) Tono won a box of CDs. He kept \( \frac{3}{16} \) of the CDs, gave \( \frac{1}{4} \) to his younger brother and \( \frac{3}{8} \) of the CDs to his cousins. There were still 15 CDs remaining in the box. How many CDs were there in the box originally?

(iii) Evaluate \( \frac{3}{4} - \frac{1}{6} \)

(iv) How many centimetres in \( \frac{7}{20} \) of 2 metres?
(v) Write these fractions in order from greatest to least:

\[
\frac{4}{5} \quad \frac{1}{2} \quad \frac{7}{10} \quad \frac{13}{20}
\]

Question 4 (10 marks)

(i) Express 6.5% as a decimal.

(ii) Andy paid a deposit of $35 for his ticket. This was in fact 25% of the full price. What was the full price of the ticket?
(iii) Jack bought a bike for $500 and sold it for $350. Find his loss a percentage of the cost price.

(iv) Write as percentages:

\[ a) \frac{9}{20} \]

\[ b) 0.162 \]

(v) What percentage is 24 minutes of 2 hours?
Question 5 (6 marks)

a) (i) Find the area of the following figure.

(ii) Find the perimeter of the figure above.

(ii) How much would it cost to put a fence around the area above at $30 per metre?