WORDY PROBLEMS – PRACTICE QUESTIONS
NON-CALCULATOR

1. Hannah ordered 15 pizzas for her work colleagues.
There were 20 people in the office.
The pizzas were cut into 8 slices.
She wants to share the slices out equally between the office.

How many slices of pizza can each person eat?

\[ 15 \times 8 = 120 \]
\[ 120 \div 20 = 6 \]

6 slices each

2. Bradley prints 50 sheets of paper each week.
He has bought 3 ink cartridges for his printer.
Each ink cartridge holds enough ink to print 600 sheets of paper.

How many weeks will the ink cartridges last him?

\[ 3 \times 600 = 1800 \]
\[ 1800 \div 50 = 36 \]

36 weeks

3. Craig wants to buy a new car, which costs £4,500.
He is going to sell his current car for £900.
The rest of the money will be paid in monthly instalments over 12 months.

Work out how much Craig will pay in each instalment.

\[ 4500 - 900 = £3,600 \]
\[ 3600 \div 12 = £300 \]
4. One helium balloon can lift 11 grams.

How many helium balloons would be required to lift a 2.5 kilogram object?

\[
2.5 \text{ kg} = 2500 \text{ grams}
\]
\[
2500 \div 11 = 227 \text{ r } 3
\]

\[
228 \text{ balloons}
\]

5. Dana has three goldfish.
Each fish needs 2 grams of fish food per day.
Dana has a 150 gram sachet of fish food.

How many days will the sachet feed Dana’s fish for?

\[
3 \times 2 = 6 \text{ grams per day}
\]
\[
150 \div 6 = 25 \text{ days}
\]

6. Eric is paid £24,000 per year.
He wants to be paid £26,000 per year.
His boss gave him a 6% pay rise.

Did Eric get what he wanted?

\[
6\% \text{ of } £24,000 = £240
\]
\[
6\% \text{ of } £24,000 = 240 \times 6 = £1440
\]
\[
24,000 + 1,440 = £25,440
\]

**No**
7. Finlay is saving up for a bicycle.
The bicycle costs £240.
There is a sale on which will reduce the price by 15%.
Finlay is saving £9 per week.

How many weeks will it take Finlay to save enough to afford the bicycle?

\[
\begin{align*}
10\% \text{ of } 240 &= 24 \\
5\% \text{ of } 240 &= 12 \\
15\% \text{ of } £240 &= £36 \\
240 - 36 &= £204 \\
204 \div 9 &= 22 \text{ r } 6
\end{align*}
\]

23 weeks

8. Gary’s laptop uses 1% of its battery for every 4 minutes he uses it.
Gary needs to finish off a piece of work but has lost his laptop charger.
It will take Gary 6 hours to finish the work.
His laptop currently has 88% of battery left.

Will Gary have enough time to complete the work before his battery runs out?

\[
\begin{align*}
4 \times 88 &= 352 \text{ minutes left} \\
6 \text{ hours} &= 60 \times 6 = 360 \text{ minutes}
\end{align*}
\]

No

9. Harvey needs to visit the launderette.
It costs £6.10 to use a washing machine.
Drying costs 25p per minute.

Harvey only has £10 in his wallet.
He is going to wash his clothes and then dry them.
What is the maximum number of minutes Harvey can dry his clothes for?

\[
\begin{align*}
£10 - £6.10 &= £3.90 \\
3.90 \div 25p &= 15 \text{ r } 15
\end{align*}
\]

15 minutes
10. 
Isha bought 9 tickets to ride a roller coaster. 
She bought 5 child tickets and 4 adult tickets for £45. 
Adult tickets cost £6.25 each.

Find the cost of a child ticket.

\[
6.25 \times 4 = £25 \\
£45 - £25 = £20 \\
£20 \div 5 = £4
\]

11. 
5 large bricks have the same mass as 8 small bricks. 
A large brick has a mass of 2.4 kilograms.

Find the mass of a small brick.

\[
2.4 \times 5 = 12 \text{ kg} \\
12 \div 8 = 1.5 \text{ kg}
\]

12. 
Courtney has four rabbits. 
Each rabbit eats 3 carrots per day. 
Bags of carrots contain 20 carrots.

How many bags of carrots would Courtney need to feed her rabbits for 2 weeks?

\[
3 \times 4 = 12 \text{ carrots per day} \\
12 \times 14 = 168 \text{ carrots for 2 weeks} \\
168 \div 20 = 8 \text{ r } 8
\]

9 bags of carrots needed
13. Kelly is preparing snacks for 12 people. She wants each person to have 3 pork pies and 2 chocolate bars.

Pork pies are sold in packs of 4 that cost £1.80 each. Chocolate bars are sold in packs of 6 that cost £2.40 each.

How much will it cost Kelly to buy the snacks needed?

Pork pies: 12 × 3 = 36 pork pies needed
36 ÷ 4 = 9 packs needed
1.80 × 9 = £16.20

Chocolate: 12 × 2 = 24 chocolate bars needed
24 ÷ 6 = 4 packs needed
2.40 × 4 = £9.60

Total cost = 16.20 + 9.60 = £25.80

14. A coach has a capacity of 88 people. The coach travelled from Bristol to Manchester, via Birmingham. When the coach left Bristol, it had 35 passengers. When it stopped in Birmingham, 16 passengers got off the coach and some people got on. When the coach arrived in Manchester, it was 75% full.

Work out how many people got on the coach at Birmingham.

35 - 16 = 19

75% of 88 = \( \frac{3}{4} \times 88 = 66 \) people on coach after Birmingham

66 - 19 = 47 people got on at Birmingham
15.
A lorry can carry a maximum of 2,000 kilograms.
Lenny wants to transport some goods on the lorry.

He wants to load the lorry with:

7 washing machines, each weighing 78 kg
12 ovens, each weighing 86 kg
15 microwaves, each weighing 27 kg

Can Lenny transport all of the goods in one journey?

\[
\begin{align*}
78 \times 7 &= 546 \text{ kg} \\
86 \times 12 &= 1,032 \text{ kg} \\
27 \times 15 &= 405 \text{ kg} \\
546 + 1032 + 405 &= 1,983 \text{ kg}
\end{align*}
\]

Yes

16.
Layla is providing cake and doughnuts for an event.
Doughnuts are sold in boxes of 10 for £4.50 each.
Cakes are sold for £5.75 each.
She is going to cut the cakes into 6 equal slices.

Layla wants each person at the event to have a doughnut and a piece of cake.
There will be 40 people at the event.

How much will it cost for Layla to cater for the group?

**Doughnuts:**
\[
\frac{40}{10} = 4 \text{ boxes needed} \\
\frac{\£4.50 \times 4}{2} = \£18
\]

**Cakes:**
\[
\frac{40}{6} = 6 \frac{4}{6} \text{ cakes needed} \\
\frac{\£5.75 \times 7}{3} = \£40.25
\]

Total cost = 40.25 + 18 = £58.25
17.  
Roger is a forester.  
His forest contains 387 oak trees and 545 pine trees. 

One third of the oak trees are cut down.  
Two fifths of the pine trees are cut down. 

Roger wants to plant some willow trees.  
The total number of trees in the forest must not exceed 1,000. 

What is the maximum number of willow trees Roger can plant?  

\[
\frac{2}{3} \text{ of } 387 = 258 \text{ oak trees left} \\
\frac{3}{5} \text{ of } 545 = 327 \text{ pine trees left} \\
258 + 327 = 585 \text{ trees left} \\
1,000 - 585 = 415
\]

18.  
Isabelle is organising a holiday for her and 5 friends.  

The holiday will last for 7 nights.  
The flights cost £77 per person.  
The hotel costs £35 per room per night.  
The rooms each have two beds.  
The friends will share rooms.  

Work out the total cost of the trip.  

\[
\text{Flights} = 77 \times 6 = £462 \\
\text{Rooms} = 6 \div 2 = 3 \text{ rooms needed} \\
3 \times 7 = 21 \\
21 \times 35 = £735 \\
\text{Total cost} = 462 + 735 = £1197
\]
19.
Jason is a beekeeper.
He has 5 beehives.
There are 25,000 bees in each beehive.
Only 35% of bees in the beehive can produce honey.
Each of these bees produce 1/10 of a teaspoon of honey per year.

1 teaspoon = 7 grams

Jason’s goal is to produce 30 kilograms of honey per year.
Will Jason achieve his goal?

\[
\begin{align*}
25000 \times 5 &= 125,000 \text{ bees} \\
35\% \text{ of } 125000 &= 43,750 \text{ bees that produce } 35\% &= 43750 \\
43750 \times \frac{1}{10} &= 4375 \text{ teaspoons of honey} \\
4375 \times 7 &= 30,625 \text{ grams} \\
&= 30.625 \text{ kg} \\
\end{align*}
\]

Yes

20.
Marco plays chess.
So far this year he has played 160 matches and has a win percentage of 65%.
If he ends the year with a win percentage of 70% or higher, he will qualify for the end-of-year tournament.
Marco has 60 games left to play this year.

How many of Marco’s final 60 games does he need to win in order to qualify?

\[
\begin{align*}
65\% \text{ of } 160 &= 104 \text{ games won so far} \\
160 + 60 &= 220 \text{ games all year} \\
70\% \text{ of } 220 &= 154 \text{ games needed to win} \\
154 - 104 &= 50 \text{ games} \\
\end{align*}
\]
21. Graham runs a fruit and vegetable shop.
He buys bananas in bunches of 5.
There are 10 bunches in each box.
There are 6 boxes in each crate.
On Saturday morning, Graham had no bananas in stock.
He then had a delivery of 8 crates of bananas.
When Graham closed the shop on Saturday night, he had 764 bananas left in stock.

How many bananas did Graham sell in the day?

\[
\begin{align*}
5 \times 10 &= 50 \\
50 \times 6 &= 300 \text{ bananas in a crate} \\
8 \times 300 &= 2,400 \text{ bananas delivered} \\
2400 - 764 &= 1,636 \text{ bananas sold}
\end{align*}
\]

22. Pete is selling his computer.
He wants to keep all of his music, videos and pictures on a hard drive while he shops for a new one.
He has \(4.6 \times 10^4\) gigabytes of music, \(5.28 \times 10^5\) gigabytes of video and \(1.7 \times 10^3\) gigabytes of pictures.
Hard drives can store 200 megabytes of data.

1 megabyte = 1,000 gigabytes.

How many hard drives does Pete need in order to store all of his files?

\[
\begin{align*}
4.6 \times 10^4 &= 46000 \text{ music} \\
5.28 \times 10^5 &= 528000 \text{ video} \\
1.7 \times 10^3 &= 1700 \text{ pictures} \\
\text{Total} &= 46000 + 528000 + 1700 = 575,700 \text{ GB} \\
575,700 \div 1,000 &= 575.7 \text{ MB} \\
575.7 \div 200 &= 2.8757 \\
\end{align*}
\]

3 hard drives required
23.
Amanda is making cheese sandwiches for an event. She has 6 loaves of bread, 3 blocks of cheese and 2 tubs of butter.

Each loaf of bread has 18 slices.
Each block of cheese weighs 350 grams.
Each tub of butter contains 370 grams.

To make a cheese sandwich, Amanda needs:

2 slices of bread
20 grams of cheese
15 grams of butter

How many cheese sandwiches can Amanda make with the ingredients she has?

Bread: \[18 \times 6 = 108 \text{ slices of bread}\]
\[
\begin{array}{c}
108 \\
\div 2 = 54
\end{array}
\]

Cheese: \[350 \times 3 = 1,050 \text{ g of cheese}\]
\[
\begin{array}{c}
1050 \\
\div 20 = 52 \text{ remainder } 10
\end{array}
\]
\[
\begin{array}{c}
= 52
\end{array}
\]

Butter: \[370 \times 2 = 740 \text{ g of butter}\]
\[
\begin{array}{c}
740 \\
\div 15 = 49 \text{ remainder } 5
\end{array}
\]
\[
\begin{array}{c}
= 49
\end{array}
\]

Maximum number of sandwiches = 49
24.
Sharon is preparing cutlery for a wedding reception.
There will be 85 guests.
Each guest needs two plates, two forks, two knives and a spoon.

Sharon currently has:

95 plates
109 forks
75 knives
88 spoons

Plates cost £3 each.
Forks, knives and spoons cost 50p each.

How much will it cost Sharon to buy the required cutlery?

Plates: 85 x 2 = 170
170 - 95 = 75 required
75 x £3 = £225

Forks: 85 x 2 = 170
170 - 109 = 61 required
61 x 50p = £30.50

Knives: 85 x 2 = 170
170 - 75 = 95 required
95 x 50p = £47.50

Spoons: 85 required
Already have 88
No spoons needed

Total = 225 + 30.50 + 47.50
       = £303
25.
Tony is organising a poker tournament.
Each player will pay £5 to enter.
Tony will take £70 from the total money raised to cover the cost of running the tournament.

The table below shows what percentage of the total money raised the top 5 players will receive.

<table>
<thead>
<tr>
<th>Position</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prize</td>
<td>30%</td>
<td>15%</td>
<td>10%</td>
<td>8%</td>
<td>6%</td>
</tr>
</tbody>
</table>

The rest of the money raised will be split evenly between the players who finish 6th, 7th and 8th.

80 players have entered the tournament.

Wayne finished 8th in the tournament.
Work out how much money Wayne won.

Total raised = 80 x £5 = £400

1st to 5th = 30% + 15% + 10% + 8% + 6%
= 69%

69% of 400 = \( \frac{400 \times 69}{100} = 4 \times 69 = £276 \)

Tony's cut = £70
276 + 70 = £346
400 - 346 = £54
£54 ÷ 3 = £18