PROPORTION INGREDIENT QUESTIONS

1) The ingredients needed for 6 pancakes are shown below.

Ingredients for 6 Pancakes
120 g flour
2 eggs
240 ml milk

a. Work out the ingredients needed for 12 pancakes.

6 × 2 = 12 pancakes

Ingredients for 12 Pancakes
240 g flour
4 eggs
480 ml milk

b. Work out the ingredients needed for 18 pancakes.

6 × 3 = 18 pancakes

Ingredients for 18 Pancakes
360 g flour
6 eggs
720 ml milk

c. Work out the ingredients needed for 24 pancakes.

6 × 4 = 24 pancakes

Ingredients for 24 Pancakes
480 g flour
8 eggs
960 ml milk

2) The ingredients needed for 4 smoothies are shown below.

Ingredients for 4 Smoothies
2 bananas
400 ml orange juice
200 g yoghurt

a. Work out the ingredients needed for 2 smoothies.

4 ÷ 2 = 2 smoothies

Ingredients for 2 Smoothies
1 banana
200 ml orange juice
100 g yoghurt

b. Work out the ingredients needed for 1 smoothie.

4 ÷ 4 = 1 smoothie

Ingredients for 1 Smoothies
½ banana
100 ml orange juice
50 g yoghurt

c. Work out the ingredients needed for 3 smoothies.

$4 \times \frac{3}{4}$ = 3 smoothies

Ingredients for 3 Smoothies
1 ½ bananas
300 ml orange juice
150 g yoghurt

3) The ingredients needed for 8 brownies are shown below. Work out the ingredients needed for 20 brownies.

Ingredients for 8 Brownies
160 g flour
200 g sugar
120 g butter
2 eggs

8 ÷ 2 = 4 brownies
4 × 5 = 20 brownies

Ingredients for 20 Brownies
400 g flour
500 g sugar
300 g butter
5 eggs

4) The ingredients needed for 10 cupcakes are shown below. Work out the ingredients needed for 25 cupcakes.

Ingredients for 10 Cupcakes
200 g self-raising flour
100 g butter
150 g sugar
2 eggs
50 ml milk

10 × 2.5 = 25 cupcakes

Ingredients for 25 Cupcakes
500 g self-raising flour
250 g butter
375 g sugar
5 eggs
125 ml milk

5) The ingredients needed for 5 servings of pasta salad are shown below. Work out the ingredients needed for 15 servings.

Ingredients for 5 Servings
300 g pasta
150 g tomatoes
100 g feta cheese
50 g olives

5 × 3 = 15 servings

Ingredients for 15 Servings
900 g pasta
450 g tomatoes
300 g feta cheese
150 g olives

6) The ingredients needed for 12 muffins are shown below.

Ingredients for 12 Muffins
240 g flour
180 g sugar
120 g butter
3 eggs

Bernie has the following ingredients:
600 g flour
360 g sugar
180 g butter
6 eggs

Work out the greatest number of muffins Bernie can make.

$$\text{Flour} = \frac{600}{240} \times 12 = 30$$

$$\text{Sugar} = \frac{360}{180} \times 12 = 24$$

$$\text{Butter} = \frac{180}{120} \times 12 = 18$$

$$\text{Eggs} = \frac{6}{3} \times 12 = 24$$

18 is the greatest number of muffins Bernie can make.

7) The ingredients needed for 6 fruit tarts are shown below.

Ingredients for 6 Fruit Tarts
180 g flour
90 g butter
60 g sugar
300 g fruit

Isabella made some fruit tarts, using 630 g of flour. Work out how many fruit tarts Isabella made.

630 ÷ 180 = 3.5
6 × 3.5 = **21 fruit tarts**

8) The ingredients needed for 8 bagels are shown below. Work out the ingredients needed for 5 bagels.

Ingredients for 8 Bagels
400 g flour
15 g yeast
10 g salt
250 ml water

8 ÷ 8 = 1 bagel
1 × 5 = 5 bagels

Ingredients for 5 Bagels
250 g flour
9 ⅜ g yeast
6 ¼ g salt
156 ¼ ml water

9) The ingredients needed for 18 biscuits are shown below. Work out the ingredients needed for 40 biscuits.

Ingredients for 18 Biscuits
270 g flour
180 g butter
90 g sugar

18 ÷ 18 = 1 biscuit
1 × 40 = 40 biscuits

Ingredients for 40 Biscuits
600 g flour
400 g butter
200 g sugar

10) The ingredients needed to make 24 brownies are shown below.
Ingredients for 24 Brownies
240 g flour
180 g sugar
120 g butter
3 eggs

Amira wants to make 36 brownies. Given she has the following ingredients, work out how much more of each ingredient she needs.

300 g flour
200 g sugar
100 g butter
2 eggs

Scale factor = 36 ÷ 24 = 1.5

Ingredients for 36 Brownies
Flour: 240 × 1.5 = 360 g
Sugar: 180 × 1.5 = 270 g
Butter: 120 × 1.5 = 180 g
Eggs: 3 × 1.5 = 4.5 eggs

Flour: 360 – 300 = 60 g more needed
Sugar: 270 – 200 = 70 g more needed
Butter: 180 – 100 = 80 g more needed
Eggs: 4.5 – 2 = 2.5 more eggs needed

11) To make 1 litre of berry smoothie, ingredients are needed in the ratio

Strawberries : Blueberries : Milk
3 : 2 : 5

Abdullah accidentally mixes 450 ml strawberries, 200 ml blueberries, and 250 ml milk.

Is the smoothie mixture in the correct proportion? If not, how much more of each ingredient does he need to add to make it correctly balanced?

3 + 2 + 5 = 10 parts
1 litre = 1000 ml
1 part = 100 ml

Correct amounts:
Strawberries = 3 × 100 = 300 ml
Blueberries = 2 × 100 = 200 ml
Milk = 5 × 100 = 500 ml

Amounts Abdullah currently has:
Strawberries = 450 ml (1.5 times too much)
Blueberries = 200 ml (correct amount)
Milk = 250 ml (needs twice as much)

Adjust all portions by a scale factor of 1.5:
S : B : M
300 ml : 200 ml : 500 ml
450 ml : 300 ml : 750 ml

Blueberries = 300 – 200 = 100 ml
Milk = 750 – 250 = 500 ml

Abdullah does not have the right proportions. He needs 100 ml more blueberries and 500 ml more milk.

12) Lena is baking a sponge cake for a party. The recipe says she needs the following amounts per 8 people:
160 g flour
120 g sugar
2 eggs

Unfortunately, Lena only has 9 eggs left at home.

What is the maximum number of people she can bake for? How much flour and sugar will she need?

2 eggs → 8 people
1 egg → 4 people
9 eggs → 9 × 4 = 36 people

Flour: 160 ÷ 8 = 20 g per person
36 × 20 = 720 g

Sugar: 120 ÷ 8 = 15 g per person
36 × 15 = 540 g

Lena can bake for 36 people, using 720 g flour and 540 g sugar.