

The taste test - finding ingredients using direct proportion (L2)

Name: _____ Date: _____

You must show all your working out even if you use a calculator

1. Some students like their squash strong and use the ratio of 1:2 of squash to water.

How many litres of water are needed to mix with 3.5 litres of squash?

I have bought three 1.5 litre bottles of orange squash. How many litres of water do I need to make up the 3 bottles?

How much drink do I make altogether?

2a. Some students like their squash weak and use the ratio of 1:8 of squash to water.

How many litres of water are needed to mix with 1.25 litres of squash?

I have bought twelve 1 litre bottles of orange squash. How many litres of water do I need?

How much drink do I make altogether?

2b. Using the ratio of 1:8 of squash to water:



How many litres of water are needed to mix with 250ml of squash?

I have 120ml of orange squash. How many litres of water do I need?

How much drink do I make altogether?

The taste test - finding ingredients using direct proportion (L2)

Name: _____ Date: _____

You must show all your working out even if you use a calculator

3a. Using the ratio of 1:4 of squash to water:

How many litres of squash are needed to mix with 168 litres of water?

How many litres of squash are needed to mix with 1236 litres of water?

I will use 18 litres of water to make the drink for the party. How many litres of orange squash do I need?

How much drink do I make altogether?

How many litres of squash are needed to mix with 8800 ml of water?

3b. You mix your orange squash in a ratio of 1:4.

How many litres of squash are needed to mix with 4800 ml of water?

I will use 4200ml of water. How many litres of orange squash do I need?

How much drink do I make altogether?

The taste test - finding ingredients using direct proportion (L2)

Name: _____ Date: _____

You must show all your working out even if you use a calculator

4a. Other students mixed their drink using the ratio of 1:6 of squash to water.

How many litres of water are needed to mix with 139 litres of squash?

I have bought 95.8 litres of orange squash. How many litres of water do I need?

How much drink I make altogether?

4b. Using the ratio of 1:6 of squash to water

How many litres of water are needed to mix with 1.1 litres of squash?

How many millilitres of water do I need to mix with 3 litres of orange squash?

How much drink I make altogether?

The taste test - finding ingredients using direct proportion (L2)

Name: _____ Date: _____

You must show all your working out even if you use a calculator

Now try these further exercises

5. Francesca makes a delicious fruit salad.

For each bowl she uses: 2 oranges, 5 pieces of melon and 12 strawberries.

Complete the table with the missing amounts.

Bowl/s	Oranges	Melons (pieces)	Strawberries
		15	
6			
	8		
			12
5			
			144

6) Here is a recipe for 10 scones.

225 g self-raising flour
pinch of salt
55 g butter
25 g caster sugar
150 ml milk

Rewrite the scones recipes (in kilogram & litres) for:

- a) 200 scones

- b) 600 scones

- c) How much castor sugar is to be used to make 300 scones?

The taste test - finding ingredients using direct proportion (L2)

Answers

1. How many litres of water are needed to mix with 3.5 litre of squash? **7 litres**

Ratio is 1 : 2
 3.5 litre : **2 litres**

(because there is twice as much water as squash in the mixture. $3.5 \times 2 = 7$)

I have bought three 1.5litre bottles of orange squash. How many litres of water do I need to make up the 3 bottles? How much drink I make altogether?

Tip: 3 Bottles = $1.5 \times 3 = 4.5$ litres

Ratio is 1 : 2
 4.5litres : ?

4.5litres : **9 litres** = $4.5 + 9 = 13.5$ litres in total

(because there is twice as much water as squash in the mixture. $4.5 \times 2 = 9$)

2a How many litres of water are needed to mix with 1.25 litre of squash? **10 litres**

Ratio is 1 : 8
 1/ : ?
 1 litre : **10 litres**

(because there are eight times as much water as squash in the mixture. $1.25 \times 8 = 10$)

I have bought twelve 1litre bottles of orange squash. How many litres of water do I need? How much drink I make altogether?

Tip: 12 Bottles = $1 \times 12 = 12$ litres

Ratio is 1 : 8
 12 litres: ?

12 litres: **96 litres** = $12 + 96 = 108$ litres in total

(because there are eight times as much water as squash in the mixture. $12 \times 8 = 96$)

2b. Using the ratio of 1:8 of squash to water,
How many litres of water are needed to mix with 250ml of squash?

Ratio is 1 : 8
 250ml : ?
 250 ml : **2000ml = 2litres**

(because there are eight times as much water as squash in the mixture. $250 \times 8 = 2000$; divide by 1000 to find the number of litres)

I have 120ml of orange squash. How much water do I need? How much drink I make altogether?

Ratio is 1 : 8
 120ml : ?
 120 ml : **960ml = 0.96litres**

(because there are eight times as much water as squash in the mixture $120 \times 8 = 960$; divide by 1000 to find the number of litres)

The taste test - finding ingredients using direct proportion (L2)

Answers

3a Using the ratio of 1:4 of squash to water

How many litres of squash are needed to mix with 168 litre of water?

Ratio is 1 : 4

? : 168 litres

42 l : 168 litres

(because there are four times as much water as squash in the mixture; You need to divide the water by 4 to find out how much squash. $168 \div 4 = 42$ litres)

How many litres of squash are needed to mix with 1236 litre of water?

Ratio is 1 : 4

? : 1236 litres

309 l : 1236 litres

(because there are four times as much water as squash in the mixture; You need to divide the water by 4 to find out how much squash. $1236 \div 4 = 309$ litres)

I will use 17litres of water. How many litres of orange squash do I need? How much drink I make altogether?

Ratio is 1 : 4

? : 18litres

4.5 l : 18 litres = $4.5 + 18 = 22.5$ litres in total

(because there are four times as much water as squash in the mixture; You need to divide the water by 4 to find out how much squash. $18 \div 4 = 4.5$ litre)

How many litres of squash are needed to mix with 8800ml l of water?

Ratio is 1 : 4

? : 8800 millilitres

2200ml : 8800 ml

2.2 litres

(because there are four times as much water as squash in the mixture; You need to divide the water by 4 to find out how much squash. $8800 \div 4 = 2200$ ml; divide by 1000 to find the number of litres)

3b. You mix your orange squash in a ratio of 1:4.

How many litres of squash are needed to mix with 4800ml of water?

Ratio is 1 : 4

? : 4800 millilitres

1200ml : 4800 ml

1.2 litres

(because there are four times as much water as squash in the mixture; You need to divide the water by 4 to find out how much squash. $4800 \div 4 = 1200$ ml; divide by 1000 to find the number of litres)

I will use 4200ml of water. How many litres of orange squash do I need? How much drink I make altogether?

Ratio is 1 : 4

? : 4200 millilitres

The taste test - finding ingredients using direct proportion (L2)

Answers

1050ml : 4200 ml

1.05 litres = $1.05 + 4.2$ litres = **5.25 litres**

(because there are four times as much water as squash in the mixture; You need to divide the water by 4 to find out how much squash. $4200 \div 4 = 1050\text{ml}$; divide by 1000 to find the number of litres)

4a. Other students mixed their drink using the ratio of 1:6 of squash to water

How many litres of water are needed to mix with 139 litres of squash?

Ratio is 1 : 6

1 litre : ?

1 litre : **834 litres**

(because there are six times as much water than squash in the mixture.

$139 \times 6 = 834$ litres)

I have bought 95.8 litres of orange squash. How many litres of water do I need?

How much drink I make altogether?

Ratio is 1 : 6

95.8 litres : ?

95.8 litres : **574.8 litres** = $95.8 + 574.8 = 670.8$ litres

(because there are six times as much water than squash in the mixture.

$95.8 \times 6 = 574.8$ litres)

4b. Using the ratio of 1:6 of squash to water

How many litres of water are needed to mix with 11 litre of squash?

Ratio is 1 : 6

1.1 litres : ?

1.1 litres : **6.6 litres**

(because there are six times as much water than squash in the mixture. $1.1 \times 6 = 6.6$)

How many millilitres of water do I need to mix with 3 litres of orange squash? How much drink I make altogether?

Ratio is 1 : 6

? : 3000 millilitres

500ml : 3000 ml

0.5 litre $0.5 + 3 = 3.5$ litres

(because there are six times as much water than squash in the mixture; You need to divide the water by 6 to find out how much squash. $3000 \div 6 = 500\text{ml}$; divide by 1000 to find the number of litres)

The taste test - finding ingredients using direct proportion (L2)

Answers

Now try these further exercises

5. Francesca makes a delicious fruit salad.

For each bowl she uses a ratio of:

2 oranges, 5 pieces of melon and 12 strawberries.

Complete the table with the missing amounts.

Bowl/s	Oranges	Melons	Strawberries
$1 \times 3 = 3$	$2 \times 3 = 6$	15	$12 \times 3 = 36$
6	$2 \times 6 = 12$	$5 \times 6 = 30$	$12 \times 6 = 72$
4	8	$5 \times 4 = 20$	$12 \times 4 = 48$
1	$2 \times 1 = 2$	$5 \times 1 = 5$	12
5	$5 \times 2 = 10$	$5 \times 5 = 25$	$5 \times 12 = 60$
12	$12 \times 2 = 24$	$12 \times 5 = 60$	144

6) Here is a recipe for 10 scones.

225 g self-raising flour

pinch of salt

55 g butter

25 g caster sugar

150 ml milk

Rewrite the scones recipes for;

a) 200 scones

4.5 kg (4500 g) self raising flour

20 pinches of salt

1.1 kg (1100 g) butter

0.5 kg (500 g) castor sugar

3 litres (3000 ml) milk

b) 600 scones

13.5kg (13500 g) self raising flour

60 pinches of salt

3.3kg (3300 g) butter

1.5kg (1500 g) castor sugar

9.0 litres (9000 ml) milk

c) How much castor sugar is to be used to make 300 scones?) **0.75 kg (750 g)**