

Fractions, Ratios and Proportions

Problem Set 3

Please answer as many of the problems in this booklet as you can.

Do NOT use a calculator.

Please use CAPITAL letters

FIRST NAME

LAST NAME

SCHOOL

CLASS

DATE ___/___/___

Cherry squash

Lucy and Lorraine are making cherry squash at a children's party. They use water and cherry juice. Every time the squash runs out, they mix some more.



Look at how much water and cherry juice they use. Do their drinks of cherry squash taste the same, or is one stronger than the other? Tick the box that shows the right statement.

A) At 3.00 pm, Lucy uses 1 part cherry juice and 3 parts water.
Lorraine uses 2 parts cherry juice and 6 parts water.

Lucy's and Lorraine's drinks taste the same.

Lucy's drink tastes stronger than Lorraine's drink.

Lorraine's drink tastes stronger than Lucy's drink.

B) At 3.30 pm, Lucy uses 3 parts cherry juice and 8 parts water.
Lorraine uses 2 parts cherry juice and 5 parts water.

Lucy's and Lorraine's drinks taste the same.

Lucy's drink tastes stronger than Lorraine's drink.

Lorraine's drink tastes stronger than Lucy's drink.

Entertainment

Students at Strathendrick High School were asked if they prefer watching television, listening to the radio or playing CDs. Of 72 students, 36 prefer television, 27 prefer radio, and 9 prefer CDs.



Mark each of the statements below ✓ or ✗ to show whether it is true or false.

- At Strathendrick High School, $\frac{1}{3}$ of the students prefer radio.
- Students prefer radio to CDs by a ratio of 3 to 1.
- The number of students who prefer television is three times the number of students who prefer CDs.
- The number of students who prefer television is the same as the number of students who prefer radio and CDs combined.
- 9% of the students prefer listening to CDs.

Onion Soup

To make soup for 8 people, you need

8 onions

4 cups of water

6 chicken stock cubes

1 cup of cream



Imagine you are cooking for 6 people. Write next to each question below how much of each ingredient you need for 6 people.

How many onions do you need? _____ onions

How much water do you need? _____ cups

How many chicken stock cubes do you need? _____ cubes

How much cream do you need? _____ cup

Beads

A box contains white and purple beads all mixed up.

$\frac{1}{4}$ of the beads are white, and 12 are purple.



How many white beads are in the box?

What is the ratio of white to purple beads?

Stopping distance

Stopping distance when driving depends on:



- *Thinking distance* - the distance covered between deciding to stop and pushing the brakes
- *Braking distance* - the distance covered between pushing the brakes and stopping

The thinking distance is directly related to the speed at which a person is driving.

The table shows the thinking distance at 20 mph and 40 mph. Write in the thinking distances at 80 mph and 90 mph.

Speed	20 mph	40 mph	80 mph	90 mph
Thinking distance	6 m	12 m		

Numbers

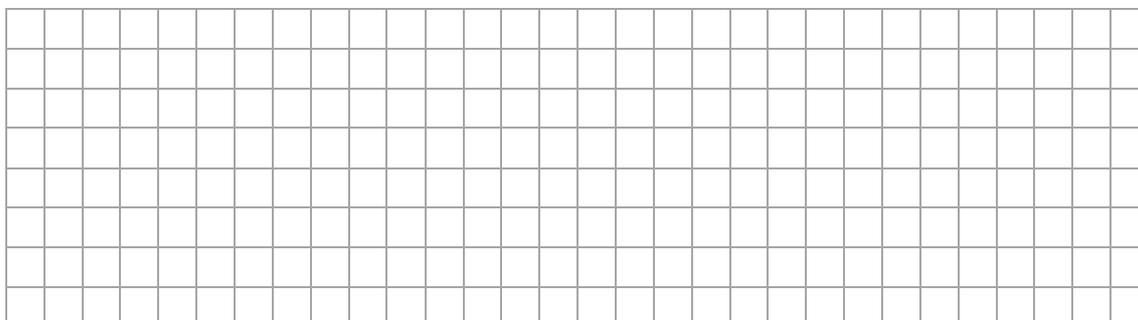
On number lines you can present an infinite amount of numbers. The example below is a number line between 0 and 10, on which the even numbers are specially marked. Every number between 0 and 10 can be located on this line, e.g. the numbers 3 and 7. On such lines you can see how close numbers are, e.g. numbers 2 and 3 are closer together than numbers 4 and 7.



A) Think of each pair of numbers on a number line. Which pair would be closer together? Tick the correct box in each row.

- | | | | | | | | | | |
|----|--------------------------|---------------|-----|---------------|----|--------------------------|---------------|-----|---------------|
| a) | <input type="checkbox"/> | $\frac{1}{5}$ | and | $\frac{3}{5}$ | OR | <input type="checkbox"/> | $\frac{1}{7}$ | and | $\frac{3}{7}$ |
| b) | <input type="checkbox"/> | $\frac{1}{4}$ | and | $\frac{1}{5}$ | OR | <input type="checkbox"/> | $\frac{1}{6}$ | and | $\frac{1}{7}$ |
| c) | <input type="checkbox"/> | $\frac{2}{3}$ | and | 0.27 | OR | <input type="checkbox"/> | $\frac{3}{5}$ | and | 0.18 |

You can draw your own number line below if that would help you.



Numbers (continued)

B) Write the number on the line of each fraction that makes each sentence correct, like in this example: 0.5 equals $\frac{1}{2}$

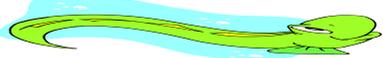
a) 0.25 equals $\frac{\quad}{32}$

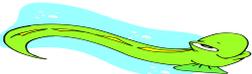
b) $\frac{1}{2}$ is less than $\frac{\quad}{20}$

c) $\frac{\quad}{20}$ is greater than 0.60

Eels

There are 3 eels in a tank at the zoo. For fun, Sean, their keeper, calls them Freddie, Teddie and Eddie. Freddie is the longest, Teddie is middle-length, and Eddie is the shortest.

Freddie  15 cm

Teddie  10 cm

Eddie  5 cm

A) The eels are fed sprats, with the number of sprats depending on their length.



On Monday Sean gives 12 sprats to Teddie.

How many sprats should he give to Freddie to match? _____

How many sprats should he give to Eddie to match? _____

B) The eels are also fed teaspoons of plankton, with the proportion depending on their length.



On Tuesday Sean gives $\frac{1}{2}$ of a teaspoon to Teddie.

How much should he give to Freddie to match? _____

How much should he give to Eddie to match? _____

**WELL DONE –
NOW YOU'VE FINISHED**