

## Troposphere



## Section One

Fractions

Key skills

Units of measure

Averages

## Section Two

Strategy

Problem solving

Exam question

Text

# Fractions

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Do the following calculations and give your answer in the simplest form.

1

$$\frac{2}{3} \times \frac{1}{3} =$$

2

$$\frac{2}{3} + \frac{1}{3} =$$

3

$$\frac{2}{3} - \frac{1}{3} =$$

4

$$\frac{2}{3} \div \frac{1}{3} =$$

5

$$5\frac{2}{3} + 3\frac{1}{3} =$$

6

$$5\frac{2}{3} - 3\frac{1}{3} =$$

A

$$\frac{2}{3} \times \frac{1}{4} =$$

B

$$\frac{2}{3} + \frac{1}{4} =$$

C

$$\frac{2}{3} - \frac{1}{4} =$$

D

$$\frac{2}{3} \div \frac{1}{4} =$$

E

$$5\frac{2}{3} + 3\frac{1}{4} =$$

F

$$5\frac{2}{3} - 3\frac{1}{4} =$$

$$\frac{2}{x} \times \frac{1}{4} =$$

$$\frac{2}{x} + \frac{1}{4} =$$

$$\frac{2}{x} - \frac{1}{4} =$$

$$\frac{2}{x} \div \frac{1}{4} =$$

$$5\frac{2}{x} + 3\frac{1}{4} =$$

$$5\frac{2}{x} - 3\frac{1}{4} =$$

# Key methods

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1

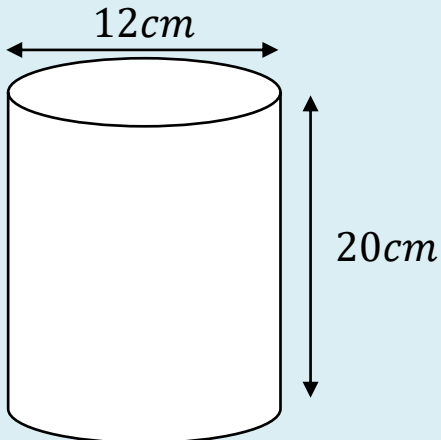
$$10\frac{1}{8} + 3\frac{1}{5} =$$

2

$$4x + 2y = 23$$

$$3x + 3y = 21$$

3



*Volume =*

*Surface area =*

***If you do not have a calculator then give your answer in terms of pi.***

# Units of measure

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State an appropriate unit of measure.

1 Distance around the world.

Write the following unit of measure in words.

5 km/h

Convert the following units of measure.

9  $3.5\text{ km} = \dots\dots\dots \text{ m}$

2 Weight of an adult elephant.

6  $\frac{\text{inches}}{\text{min}}$

10  $3.5\text{ l} = \dots\dots\dots \text{ ml}$

3 Volume of a cup.

7  $\text{Kg}/\text{m}^2$

11  $0.002\text{ kg} = \dots\dots\dots \text{ mg}$

4 Speed of a snail.

8  $\frac{\text{m}}{\text{s}^2}$

12  $2\text{ m}^2 = \dots\dots\dots \text{ cm}^2$

# Averages

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↓ 10, 8, 10, 2, 5

1 *Mode* =

2 *Median* =

3 *Mean* =

4 *Range* =

5 One more number is added.  
The mean is doubled.  
What is the number?

↓ 5,  $x$ , 6, 8, 5, 7

6 Write an expression for the  
mean average.

7 There are three possible medians, one  
will be an expression. What are they?

8 There are three possible ranges, two  
will be an expression. What are they?

9 Given the mean of the 6 numbers is  
zero, what is the value of  $x$ ?

**Reflect on the first section.**

**WWW:**

**EBI:**

You are given the task of finding out the stress levels of students in your school.  
Give a brief description of how you would do this.



1

What is a half of a third, plus a third of a quarter, plus a quarter of a fifth?

A

$$\frac{1}{1440}$$

B

$$\frac{3}{38}$$

C

$$\frac{1}{30}$$

D

$$\frac{1}{3}$$

E

$$\frac{3}{10}$$

2

2009 people are taking part in a public fun run. The number of people Hans beat is three times as big as the number of people that have finished before him.

In which place did Hans finish the race?

A 503

B 501

C 500

D 1503

E 1507

3

There are 10 boys and 20 girls in a class. The class has a test. The mean mark for all the class is 60. The mean mark for the girls is 54. Work out the mean mark for the boys.

1

There are 10 boys and 20 girls in a class.

The class has a test.

The mean mark for all the class is 60.

The mean mark for the girls is 54.

Work out the mean mark for the boys.

-----  
(3 marks)

# Show your workings

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1) How many people would be needed to create a human chain around the world?

Every person in the world joins together to make a human chain.

2) How many times around the world does it go?

**You must justify and explain your answers.**

*Pop  $\approx 7.8bn$*



*Equator  $\approx 40,000km$*

# End of the lesson

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**Well done for completing the lesson.**



## Reflection