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**FUNCTIONAL SKILLS**

Maths Level 2



**Area: Numbers and the number system**

Criterion 8: Express one number as a fraction of another

**Expressing fractions**

A fraction is a way of representing a part of a whole. It is written with 2 numbers that are placed one on top of the other and separated with a line.

The top number is called the numerator. It tells you how many parts you have.

The bottom number is called the denominator. It tells you how many equal parts the whole is divided into.

For example,

3 is the numerator.

4 is the denominator.

This means you have 3 parts out of a total of 4 equal parts.

Let’s look at a scenario.

You have a pizza that is cut into 8 equal slices. You eat 3 slices.

The fraction representing the part of the pizza you ate is .

The numerator is 3: this is the number of slices you ate.

The denominator is 8: this is the total number of slices.

**Question 1**

Express 36 as a fraction of 52.

(Show your working out.)

(1 mark)

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**Question 2**

Show 7 out of 20 as a fraction.

(Show your working out.)

(1 mark)

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**Simplifying fractions**

Simplifying a fraction means reducing it to its simplest form, where the numerator and denominator have no common factors other than 1. Here's how you can simplify a fraction:

**Step 1: identify the numerator and denominator**

8 is the numerator and 12 is the denominator.

**Step 2: find the highest common factor (HCF)**

The HCF is the largest number that divides both the numerator and the denominator without leaving a remainder.

Factors of 8: 1, 2, **4**, 8

Factors of 12: 1, 2, 3, **4**, 6, 12

The HCF is 4 because it is the largest factor that both 8 and 12 share.

**Step 3:** **divide the numerator and denominator by the HCF**

8 ÷ 4 = 2

12 ÷ 4 = 3

In its simplest form, becomes

**Question 3**

Express 12 as a fraction of 15. Give your answer in its simplest form.

(Show your working out.)

(2 marks)

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**Question 4**

What is 140 out of 210 as a fraction? Give your answer in its simplest form.

(Show your working out.)

(2 marks)

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**Question 5**

In a classroom, there are 39 boys and 24 girls. Express the number of girls as a fraction. Give your answer in its simplest form.

(Show your working out.)

(3 marks)

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**Question 6**

You read 45 pages of a 120-page book. Express the number of pages you’ve read as a fraction in its simplest form.

(Show your working out.)

(2 marks)

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**Exam practice 1**

What is 16 out of 52 as a fraction?

(Show your working out.)

(1 mark)

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**Exam practice 2**

You are conducting a road survey outside a school to see what different types of vehicles pass by.

You record the following results:

32 of the vehicles were cars

1 of the vehicles was a tractor

6 of the vehicles were lorries

19 of the vehicles were vans

What fraction of the vehicles were vans?

(Show your working out.)

(3 marks)

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**Exam practice 3**

Out of 40 survey responses, 25 were positive. Express the number of **negative** responses as a fraction. Give your answer in its simplest form.s

(Show your working out.)

(3 marks)

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**Exam practice 4**

You are working for Highfield Adoption Centre.

In the past week, the following animals were adopted:

14 cats

20 dogs

6 birds

16 small mammals.

**What fraction of the total animals are small mammals?**

**Give your answer in its simplest form.**

(Show your working out.)

(4 marks)

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**Exam practice 5**

This month you travelled 200 miles. 150 miles of this was work related. What fraction of these miles was work related? Give your answer in its simplest form.

(Show your working out.)

(2 marks)

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**Exam practice 6**

Out of 255 employees in a company, 162 are part-time workers. Express the number of part-time workers as a fraction. Give your answer in its simplest form.

(Show your working out.)

(2 marks)

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**Answers**

**Expressing fractions**

**Question 1**

**Question 2**

**Simplifying fractions**

**Question 3**

The first mark is awarded for correctly expressing the number as a fraction:

The second mark is awarded for showing the fraction in its simplest form.

The highest common factor is 3

12 ÷ 3 = 4

15 ÷ 3 = 5

in its simplest form is

**Question 4**

The first mark is awarded for correctly expressing the number as a fraction:

The second mark is awarded for showing the fraction in its simplest form.

The highest common factor is 70

140 ÷ 70 = 2

210 ÷ 70 = 3

in its simplest form is

**Question 5**

The first mark is awarded for correctly calculating the total number of students.

39 + 24 = 63

The second mark is awarded for correctly expressing the number as a fraction:

The third mark is awarded for showing the fraction in its simplest form.

The highest common factor is 3

24 ÷ 3 = 8

63 ÷ 3 = 21

in its simplest form is

**Question 6**

The first mark is awarded for correctly expressing the number as a fraction:

The second mark is awarded for showing the fraction in its simplest form.

The highest common factor is 15

45 ÷ 15 = 3

120 ÷ 15 = 8

in its simplest form is

**Exam practice**

**Exam practice 1**

**Exam practice 2**

First, add up the total number of vehicles. You will receive 1 mark for the correct method and 1 mark for the correct answer.

32 + 1 + 6 + 19 = 58

The final mark is awarded for giving the correct fraction.

**Exam practice 3**

The first mark is awarded for correctly calculating the number of negative responses.

40 - 25 = 15

The second mark is awarded for correctly expressing the number as a fraction:

The third mark is awarded for showing the fraction in its simplest form.

The highest common factor is 5

15 ÷ 5 = 3

40 ÷ 5 = 8

in its simplest form is

**Exam practice 4**

The first mark is awarded for using the correct method to express the fraction.

14 + 20 + 6 + 16 = 56

The second mark is awarded for correctly expressing the number of small mammals as a fraction:

The third mark is awarded for correctly attempting to simplify the fraction

The highest common factor is 5

16 ÷ 8 = 2

56 ÷ 8 = 7

The final mark is awarded for showing the fraction in its simplest form.

in its simplest form is

**Exam practice 5**

The first mark is awarded for correctly expressing the number as a fraction:

The second mark is awarded for showing the fraction in its simplest form.

The highest common factor is 50

150 ÷ 50 = 3

200 ÷ 50 = 4

in its simplest form is

**Exam practice 6**

The first mark is awarded for correctly expressing the number as a fraction:

The second mark is awarded for showing the fraction in its simplest form.

The highest common factor is 3

162 ÷ 3 = 54

255 ÷ 3 = 85

in its simplest form is

**Your functional skills exam**

Your functional skills exams will consist of 2 papers.   
These papers will take place over the following time periods:

* Non-calculator paper – 40 minutes
* Calculator – 1 hour 50 minutes

Further information on the format that your test will take can be obtained from your training provider.

**Hints and tips**

* Find out what format your exam will be in. It may be paper-based   
  or on-screen.
* Plan what you are going to revise in advance. Don’t leave it until the last minute.
* Do as many past papers as you can so you are prepared for the day. If possible, try to complete the past papers following the same format as the actual exam.
* Find a quiet place to study and revise. It helps to sit at a table or a desk, don’t revise in bed.
* Don’t stay up all night revising the night before your exam. It’s important to have a good rest so you feel refreshed and ready to go.
* Read the question 3 times. The first time to ensure you understand what is being asked, the second time to get an understanding of what you need to do, and a third time to figure out exactly what maths techniques you should be applying.
* If you are struggling with a question, skip it and come back to it later. Try not to sit getting worked up about a difficult question, it will only waste exam time. Move on and come back to it after you have answered the other questions.
* Take note of the number of marks available. This will give you an indication of how much working out you must show. For example, 1 mark will need an answer only and more marks will need you to show your working out.
* When you’ve finished the exam, go back and check your answers. If you still have time remaining, use it to check your answers and when you have checked your answers check them again.