GCSE · Edexcel · Maths

2 hours 40 questions

Exam Questions

Fractions

Basic Fractions / Mixed Numbers & Improper Fractions / Adding & Subtracting Fractions / Multiplying & Dividing Fractions

Easy (10 questions)	/22
Medium (19 questions)	/59
Hard (11 questions)	/44
Total Marks	**/125**

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Easy Questions

1 (a) Work out $\frac{1}{7} \times \frac{2}{3}$

(1 mark)

(b) Work out $\frac{3}{5} - \frac{1}{3}$

(2 marks)

2 Show that $3\frac{3}{4} \times \frac{7}{9} = 2\frac{11}{12}$

(3 marks)

3 Lily's age is 2 years and 4 months.
Hugo's age is 1 year and 8 months.

Write Lily's age in months as a fraction of Hugo's age in months. Give your fraction in its simplest form.

(2 marks)

4 $\frac{3}{5}$ of a number is 162

Work out the number.

(2 marks)

5 Work out £1.50 as a fraction of 60p.

A. $\frac{2}{5}$

B. $\frac{1}{4}$

C. $\frac{4}{1}$

D. $\frac{5}{2}$

(1 mark)

6 Choose the fraction that is equivalent to 3.875

A. $\frac{15}{4}$

B. $\frac{29}{8}$

C. $\frac{31}{8}$

D. $\frac{15}{8}$

(1 mark)

7 The height of Zak is 1.86 metres.

The height of Fred is 1.6 metres.

Write the height of Zak as a fraction of the height of Fred.

Give your answer in its simplest form.

(3 marks)

8 Work out

$$\frac{3}{4} + \frac{1}{6}$$

Give your answer in its simplest form.

(2 marks)

9 Calculate

$$\frac{3}{5} + \frac{5}{8}$$

Give your answer as a mixed number in its simplest form.

(3 marks)

10 Work out $\frac{2}{15} \times \frac{15}{22}$

Give your answer in its lowest terms.

(2 marks)

Medium Questions

1 (a) Work out $1\frac{1}{5} \times 2\frac{1}{3}$

Give your answer as a mixed number in its simplest form.

(3 marks)

(b) Work out $2\frac{7}{15} - 1\frac{2}{3}$

(3 marks)

2 (a) Work out $2\frac{1}{7} + 1\frac{1}{4}$

(2 marks)

(b) Work out $1\frac{1}{5} \div \frac{3}{4}$

Give your answer as a mixed number in its simplest form.

(2 marks)

3 Work out $3\frac{1}{2} \times 1\frac{3}{5}$

Give your answer as a mixed number in its simplest form.

(3 marks)

4 Show that $6\frac{3}{4} \div 2\frac{4}{7} = 2\frac{5}{8}$

(3 marks)

5 Show that $3\frac{1}{5} \times 1\frac{5}{6} = 5\frac{13}{15}$

(3 marks)

6 Show that $2\frac{4}{7} \div 1\frac{1}{8} = 2\frac{2}{7}$

(3 marks)

7 Show that $4\frac{2}{3} + 3\frac{4}{5} = 8\frac{7}{15}$

(3 marks)

8 Show that $3\frac{1}{5} \times 2\frac{5}{8} = 8\frac{2}{5}$

(3 marks)

9 Show that $4\frac{2}{3} \div 1\frac{1}{9} = 4\frac{1}{5}$

(3 marks)

10 Show that $3\frac{4}{7} - 1\frac{5}{8} = 1\frac{53}{56}$

(3 marks)

11 The range of a set of numbers is $15\frac{1}{4}$

The smallest number is $-2\frac{7}{8}$

Work out the largest number.

(3 marks)

12 Choose the number half way between $\frac{7}{12}$ and $\frac{3}{4}$

A. $\frac{7}{32}$

B. $\frac{5}{8}$

C. $\frac{2}{3}$

D. $\frac{1}{2}$

(1 mark)

13 Work out the value of $\left(1\frac{2}{3}\right)^2$

A. $1\frac{4}{9}$

B. $3\frac{1}{3}$

C. $2\frac{4}{9}$

D. $2\frac{7}{9}$

(1 mark)

14 Work out $8\frac{1}{2} \div 2\frac{2}{3}$

Give your answer as a mixed number.

(4 marks)

15 Work out $2\frac{3}{4} \times 1\frac{5}{7}$

Give your answer as a mixed number in its simplest form.

(3 marks)

16 In a school, $\frac{2}{3}$ of the students study a language. Of those students who study a language, $\frac{2}{5}$ study Spanish.

Find the ratio of students who study Spanish to students who do not study Spanish.

(3 marks)

17 A unit fraction has a numerator equal to 1, for example $\frac{1}{3}$, $\frac{1}{7}$ and $\frac{1}{25}$.

Unit fractions can be written as the sum of two different unit fractions, for example

$$\frac{1}{2} = \frac{1}{3} + \frac{1}{6}$$

Write each of the following unit fractions as the sum of two **different** unit fractions.

$$\frac{1}{4} = \frac{1}{\square} + \frac{1}{\square}$$

$$\frac{1}{5} = \frac{1}{\square} + \frac{1}{\square}$$

$$\frac{1}{6} = \frac{1}{\square} + \frac{1}{\square}$$

(3 marks)

18 Work out $1\frac{1}{4} \div \frac{2}{7}$

(3 marks)

19 Using algebra, prove that $2.03\dot{7}$ can be written as $\frac{917}{450}$

(4 marks)

Hard Questions

1 (a) Work out $2\frac{1}{4} \times 3\frac{1}{3}$

Give your answer as a mixed number in its simplest form.

(3 marks)

(b) Write the numbers 3, 4, 5 and 6 in the boxes to give the greatest possible total.

You may write each number only once.

$$\square\frac{1}{\square} = \square\frac{2}{\square}$$

(1 mark)

2 Show that $1\frac{2}{3} + 2\frac{3}{4} = 4\frac{5}{12}$

(3 marks)

3 There are 60 children in a club.

In the club, the ratio of the number of girls to the number of boys is $3:1$

$\frac{3}{5}$ of the girls play a musical instrument.

$\frac{4}{5}$ of the boys play a musical instrument.

What fraction of the 60 children play a musical instrument?

(4 marks)

4 Show that $5\frac{2}{3} - 2\frac{3}{4} = 2\frac{11}{12}$

(3 marks)

5 Each month Edna spends all her income on rent, on travel and on other living expenses.

She spends $\frac{1}{3}$ of her income on rent.

She spends $\frac{1}{5}$ of her income on travel.

She spends $\$420$ of her income on other living expenses.

Work out her income each month.

(4 marks)

6 A shopkeeper compares the income from sales of a laptop in March and April.

April

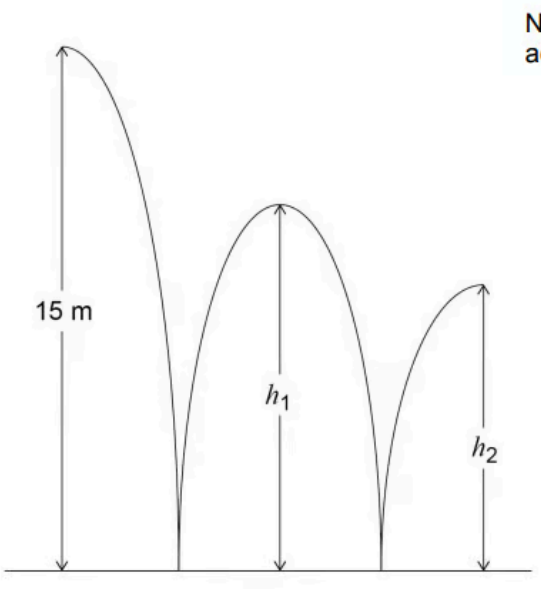
Price	$\frac{1}{5}$ more than March
Number sold	$\frac{1}{4}$ less than March

By what fraction does the income from these sales decrease in April?

(3 marks)

7 (a) A ball is thrown from a height of 15 metres.

It bounces to height h_1, then to height h_2 as shown.



h_1 is three quarters of the original height.

Jack expects h_2 to be three quarters of h_1

Work out the value of h_2 that he expects.

.....metres

(2 marks)

(b) In fact, h_2 is two thirds of h_1

How does this affect the answer to part (a)? Tick a box.

☐ The ball bounced higher than he expected

☐ The ball bounced lower than he expected

Show working to support your answer.

(2 marks)

8 In an office there are twice as many females as males.

$\frac{1}{4}$ of the females wear glasses.

$\frac{3}{8}$ of the males wear glasses.

84 people in the office wear glasses.
Work out the number of people in the office.

(4 marks)

9 Charlie and Jasmine share cartons of apple juice.

Charlie drinks $\frac{1}{3}$ of a carton every day.

Jasmine drinks $\frac{2}{5}$ of a carton every day.

Any apple juice left in a carton at the end of the day is used the following day.

The cost of a carton is 70p.
Charlie and Jasmine buy just enough cartons to last them for 10 days.

How much do they spend in total for these cartons?
Give your answer in £. Show your working.

£ .....

(6 marks)

10 Mrs Mills buys 4 packs of treats for her cats, Fluff and Tigger.

She gives Fluff $\frac{1}{6}$ of a pack each day.

She gives Tigger $\frac{1}{5}$ of a pack each day.

For how many complete days will the 4 packs of treats last?

(5 marks)

11 Sally has 30 feet of ribbon.

She cuts strips each of length $2\frac{2}{5}$ feet from the ribbon.

Sally says

> I can cut 13 of these strips from this ribbon.

Is she correct? Show how you decide.

(4 marks)