

11+ Maths Practice Paper

Year 5 · Intermediate

Lesson 3.1: Equivalent fractions and simplifying

Read this with your child:

1. This paper has **24 questions** in two parts. Work through them in order. The questions get harder as you go.
2. **Part 1** is multiple choice. Choose **one** answer, A, B, C, D or E, and mark it on the separate answer sheet by drawing a firm line through the box next to its letter. If you change your mind, rub the line out completely and mark your new answer.
3. **Part 2** asks you to write your answer. Write it in the boxes on the answer sheet, **one digit in each box**, starting from the left.
4. If a question is hard, leave it and come back to it at the end.
5. You may use rough paper for working out. You may **not** use a calculator.
6. Suggested time: **30 minutes**.

The answer sheet is after the questions. The answers, with a short explanation of each, are at the back for a parent to mark with.

These are original practice questions written by Elite Learners in the style of 11+ entrance tests. They are not produced by, or connected with, GL Assessment or Cambridge University Press & Assessment (CEM).

Example

What is the missing number?

$$\frac{3}{4} = \frac{\boxed{?}}{12}$$

A 6

B 8

C 9

D 11

E 12

Answer: C $4 \times 3 = 12$, so do the same to the top: $3 \times 3 = 9$.

The answer, C, has already been marked on your answer sheet.

Now turn over and start Part 1.

Part 1: Multiple choice

1

Which fraction is equal to $\frac{2}{3}$?

A $\frac{3}{4}$

B $\frac{4}{9}$

C $\frac{2}{9}$

D $\frac{6}{9}$

E $\frac{5}{6}$

2

What is the missing number?

$$\frac{5}{6} = \frac{\boxed{?}}{18}$$

A 15

B 13

C 17

D 10

E 30

3

What is the missing number?

$$\frac{4}{7} = \frac{12}{\boxed{?}}$$

A 15

B 19

C 21

D 28

E 24

4

Write this fraction in its simplest form.

$$\frac{12}{16}$$

A $\frac{6}{8}$

B $\frac{2}{3}$

C $\frac{4}{5}$

D $\frac{1}{4}$

E $\frac{3}{4}$

5

What is the missing number?

$$\frac{15}{20} = \frac{3}{\boxed{?}}$$

A 5

B 4

C 8

D 12

E 15

6

Which fraction is not equivalent to $\frac{3}{5}$?

A $\frac{4}{6}$

B $\frac{6}{10}$

C $\frac{9}{15}$

D $\frac{12}{20}$

E $\frac{15}{25}$

7

Write this fraction in its simplest form.

$$\frac{18}{24}$$

A $\frac{9}{12}$

B $\frac{6}{8}$

C $\frac{2}{3}$

D $\frac{3}{4}$

E $\frac{17}{23}$

8

You want to write $\frac{24}{36}$ in its simplest form in one step.

What should you divide the top and bottom by?

A 2

B 4

C 12

D 6

E 36

9

A class has 32 children. 12 of them are boys.

What fraction of the class are boys, in its simplest form?

A $\frac{5}{8}$

B $\frac{3}{5}$

C $\frac{6}{16}$

D $\frac{1}{3}$

E $\frac{3}{8}$

10

What is the missing number?

$$\frac{7}{8} = \frac{\boxed{?}}{40}$$

A 28

B 35

C 39

D 40

E 32

11

Four of these fractions are equal. Which one is not?

A $\frac{4}{6}$

B $\frac{6}{9}$

C $\frac{10}{15}$

D $\frac{9}{12}$

E $\frac{8}{12}$

12

Write this fraction in its simplest form.

$$\frac{30}{45}$$

A $\frac{2}{3}$

B $\frac{6}{9}$

C $\frac{3}{4}$

D $\frac{10}{15}$

E $\frac{1}{3}$

13

What is the missing number?

$$\frac{\boxed{?}}{9} = \frac{20}{45}$$

A 3

B 5

C 6

D 9

E 4

14

There are 60 people at a party. 45 of them are children. The rest are adults.

What fraction of the people are adults, in its simplest form?

A $\frac{3}{4}$

B $\frac{1}{3}$

C $\frac{1}{4}$

D $\frac{15}{60}$

E $\frac{1}{5}$

15

Which fraction is already in its simplest form?

A $\frac{9}{21}$

B $\frac{15}{28}$

C $\frac{14}{35}$

D $\frac{12}{27}$

E $\frac{22}{33}$

16

What is the missing number?

$$\frac{36}{48} = \frac{\boxed{?}}{4}$$

A 2

B 9

C 12

D 32

E 3

17

Which two fractions are equivalent?

A $\frac{2}{5}$ and $\frac{6}{15}$

B $\frac{3}{4}$ and $\frac{4}{5}$

C $\frac{5}{6}$ and $\frac{10}{18}$

D $\frac{1}{3}$ and $\frac{3}{6}$

E $\frac{4}{9}$ and $\frac{8}{27}$

18

A fraction is equal to $\frac{3}{4}$. Its denominator is 28.

What is its numerator?

A 24

B 27

C 7

D 21

E 25

Part 2: Write your answer

19

What is the missing number?

$$\frac{5}{8} = \frac{\boxed{?}}{24}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

20

What is the missing number?

$$\frac{3}{7} = \frac{27}{\boxed{?}}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

21

What is the missing number?

$$\frac{42}{56} = \frac{\boxed{?}}{4}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

22

Write this fraction in its simplest form.

What is the denominator of your answer?

$$\frac{48}{60}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

23

There are 36 pupils on a bus. 27 of them are wearing a coat. The fraction wearing a coat, in its simplest form, is written below.

What is the missing number?

$$\frac{27}{36} = \frac{3}{\boxed{?}}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

24

What is the missing number?

$$\frac{4}{9} = \frac{\boxed{?}}{63}$$

Write your answer in the boxes on the answer sheet, one digit in each box.

Answer sheet

11+ Maths Practice Paper · Year 5 · Lesson 3.1: Equivalent fractions and simplifying

Name

Draw a firm line through the box next to your answer, like the example.

Part 1: Multiple choice

Ex	A ☐	B ☐	C ☒	D ☐	E ☐
1	A ☐	B ☐	C ☐	D ☐	E ☐
2	A ☐	B ☐	C ☐	D ☐	E ☐
3	A ☐	B ☐	C ☐	D ☐	E ☐
4	A ☐	B ☐	C ☐	D ☐	E ☐
5	A ☐	B ☐	C ☐	D ☐	E ☐
6	A ☐	B ☐	C ☐	D ☐	E ☐
7	A ☐	B ☐	C ☐	D ☐	E ☐
8	A ☐	B ☐	C ☐	D ☐	E ☐
9	A ☐	B ☐	C ☐	D ☐	E ☐
10	A ☐	B ☐	C ☐	D ☐	E ☐
11	A ☐	B ☐	C ☐	D ☐	E ☐
12	A ☐	B ☐	C ☐	D ☐	E ☐
13	A ☐	B ☐	C ☐	D ☐	E ☐
14	A ☐	B ☐	C ☐	D ☐	E ☐
15	A ☐	B ☐	C ☐	D ☐	E ☐
16	A ☐	B ☐	C ☐	D ☐	E ☐
17	A ☐	B ☐	C ☐	D ☐	E ☐
18	A ☐	B ☐	C ☐	D ☐	E ☐

Part 2: Write your answer, one digit in each box

19		22	
20		23	
21		24	

Answers

For a parent to mark with. One mark for each question: the paper is out of 24. Talk through any your child got wrong, using the explanation.

Q	Answer	How to get it
1	D $\frac{6}{9}$	Multiply the top and bottom by 3: $\frac{2}{3} = \frac{6}{9}$.
2	A 15	$6 \times 3 = 18$, so $5 \times 3 = 15$. (17 comes from adding 12 to both, which does not work.)
3	C 21	$4 \times 3 = 12$, so $7 \times 3 = 21$.
4	E $\frac{3}{4}$	The HCF of 12 and 16 is 4. Divide both by 4: $\frac{3}{4}$. ($\frac{6}{8}$ is equal, but 6 and 8 can still be halved.)
5	B 4	$15 \div 5 = 3$, so do the same to the bottom: $20 \div 5 = 4$.
6	A $\frac{4}{6}$	The others are $\frac{3}{5}$ multiplied by 2, 3, 4 and 5. $\frac{4}{6}$ adds 1 to the top and bottom, and $\frac{4}{6} = \frac{2}{3}$.
7	D $\frac{3}{4}$	The HCF of 18 and 24 is 6. Divide both by 6: $\frac{18}{24} = \frac{3}{4}$.
8	C 12	Divide by the highest common factor of 24 and 36, which is 12: $\frac{24}{36} = \frac{2}{3}$.
9	E $\frac{3}{8}$	The part over the whole is $\frac{12}{32}$. The HCF of 12 and 32 is 4, so $\frac{12}{32} = \frac{3}{8}$.
10	B 35	$8 \times 5 = 40$, so $7 \times 5 = 35$.
11	D $\frac{9}{12}$	Simplify each one. $\frac{4}{6}$, $\frac{6}{9}$, $\frac{10}{15}$ and $\frac{8}{12}$ are all $\frac{2}{3}$, but $\frac{9}{12} = \frac{3}{4}$.
12	A $\frac{2}{3}$	The HCF of 30 and 45 is 15. Divide both by 15: $\frac{30}{45} = \frac{2}{3}$.
13	E 4	$45 \div 5 = 9$, so do the same to the top: $20 \div 5 = 4$.
14	C $\frac{1}{4}$	$60 - 45 = 15$ adults. The part over the whole is $\frac{15}{60}$. Divide both by 15: $\frac{1}{4}$.
15	B $\frac{15}{28}$	Only 1 goes into 15 and 28. The others can be divided by 3, 7, 3 and 11.
16	E 3	$48 \div 12 = 4$, so $36 \div 12 = 3$. Or simplify step by step: $\frac{36}{48} = \frac{18}{24} = \frac{9}{12} = \frac{3}{4}$.
17	A $\frac{2}{5}$ and $\frac{6}{15}$	Multiply the top and bottom of $\frac{2}{5}$ by 3: $\frac{6}{15}$. In the others, the top and bottom were not multiplied by the same number.
18	D 21	$4 \times 7 = 28$, so the numerator is $3 \times 7 = 21$. The fraction is $\frac{21}{28}$.
19	15	$8 \times 3 = 24$, so $5 \times 3 = 15$.
20	63	$3 \times 9 = 27$, so $7 \times 9 = 63$.
21	3	$56 \div 14 = 4$, so $42 \div 14 = 3$. Step by step works too: $\div 2$ gives $\frac{21}{28}$, then $\div 7$ gives $\frac{3}{4}$.
22	5	The HCF of 48 and 60 is 12. $\frac{48}{60} = \frac{4}{5}$, so the denominator is 5.
23	4	$27 \div 9 = 3$, so $36 \div 9 = 4$. The fraction is $\frac{3}{4}$.
24	28	$9 \times 7 = 63$, so $4 \times 7 = 28$.

Score: out of 24