Name:

Exam Style Questions

Simplifying Fractions
Equivalent Fractions
Fractions of Shapes
Expressing as a Fraction

Corbettmaths

Equipment needed: Pen, Pencil, Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Videos 146, 135, 143, 136

Answers and Video Solutions

1. Simplify

Give each answer in its simplest form.

(a) $\frac{4}{10}$

$\frac{2}{5}$

.....

(1)

(b) $\frac{4}{8}$

$\frac{1}{2}$

.....

(1)

(c) $\frac{6}{15}$

$\frac{2}{5}$

.....

(1)

(d) $\frac{15}{20}$

$\frac{3}{4}$

.....

(1)

(e) $\frac{20}{100}$

$\frac{1}{5}$

.....

(1)

2. Find the missing numbers

(a) $\frac{3}{4} = \frac{\boxed{12}}{16}$

(1)

(b) $\frac{\boxed{2}}{5} = \frac{6}{15}$

(1)

(c) $\frac{7}{8} = \frac{35}{\boxed{40}}$

(1)

(d) $\frac{2}{\boxed{5}} = \frac{16}{40}$

(1)

(e) $\frac{4}{15} = \frac{\boxed{16}}{60}$

(1)

(f) $\frac{6}{11} = \frac{66}{\boxed{121}}$

(1)

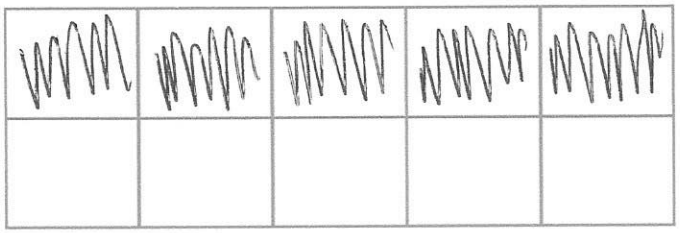
3. Here are some fractions.

$\frac{2}{4}$ $\frac{3}{7}$ $\frac{5}{9}$ $\frac{9}{18}$ $\frac{10}{22}$

Circle the two fractions that are equivalent to $\frac{1}{2}$

(2)

4. Here is a shape made from 10 squares.



(a) Shade $\frac{1}{2}$ of the shape.

(1)

(b) Simplify $\frac{6}{8}$

$\frac{3}{4}$

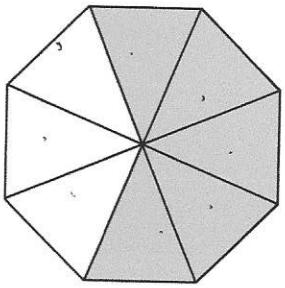
(1)

(c) Circle the fractions that are equivalent to $\frac{4}{5}$

$\frac{6}{10}$ $\frac{12}{15}$ $\frac{20}{30}$ $\frac{24}{25}$ $\frac{44}{55}$

(2)

5.



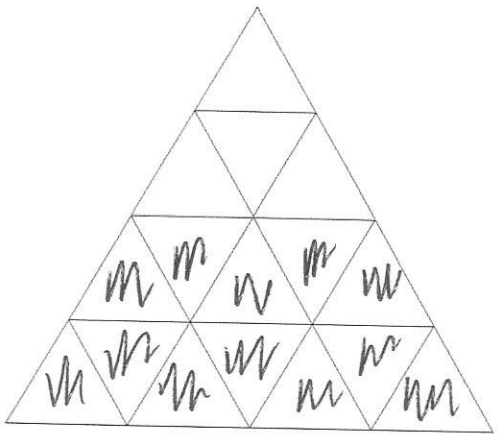
What fraction of the shape is shaded?

$\frac{5}{8}$

.....

(1)

6. Shown is a triangular grid.



(a) Shade $\frac{3}{4}$ of the grid. $\frac{3}{4}$ of 16 = 12

(1)

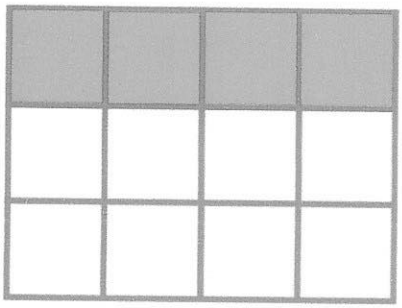
(b) Simplify $\frac{8}{14}$

$\frac{4}{7}$

.....

(1)

7.



What fraction of this shape is shaded?
Give your answer in its simplest form.

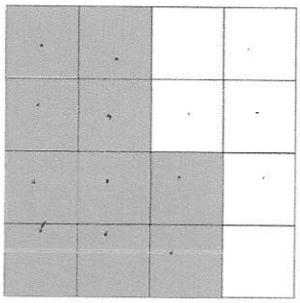
$\frac{4}{12} = \frac{1}{3}$

$\frac{1}{3}$

.....

(2)

8.



What fraction of this shape is **unshaded**?
Give your answer in its simplest form.

$\frac{6}{16} = \frac{3}{8}$

$\frac{3}{8}$

.....

(2)

9. Reuben was asked to simplify fully $\frac{6}{24}$

He says the answer is $\frac{3}{12}$

Is Reuben correct?
Explain your answer.

$\frac{6}{24} = \frac{3}{12} = \frac{1}{4}$

Reuben was asked to "simplify fully" but he only simplified to $\frac{3}{12}$. This can be simplified again to $\frac{1}{4}$.

(1)

10. Write 12 out of 16 as a fraction in its simplest form.

$\frac{12}{16} = \frac{6}{8} = \frac{3}{4}$

$\frac{3}{4}$

(2)

11. In a class there are 12 girls and 18 boys.

What fraction of the class are girls?
Give your answer in its simplest form.

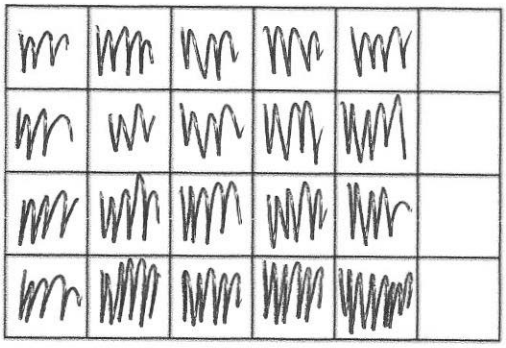
$12 + 18 = 30$

$\frac{12}{30} = \frac{2}{5}$

$\frac{2}{5}$

(2)

12.

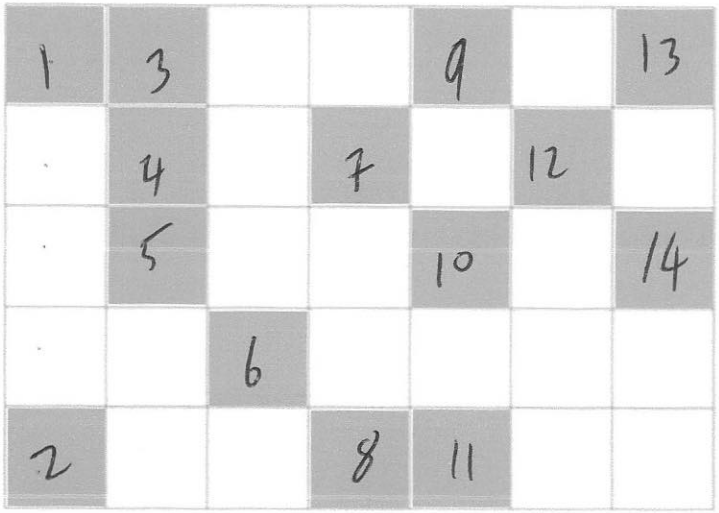


Shade $\frac{5}{6}$ of the shape.

$\frac{5}{6}$ of 24 = 20

(1)

13.



$5 \times 7 = 35$

What fraction of this shape is shaded?
Give your answer in its simplest form.

$\frac{14}{35} = \frac{2}{5}$

$\frac{2}{5}$

.....

(2)

14. Explain why $\frac{6}{8} = \frac{3}{4}$

Both numerator & denominators has been divided by the same number, 2.

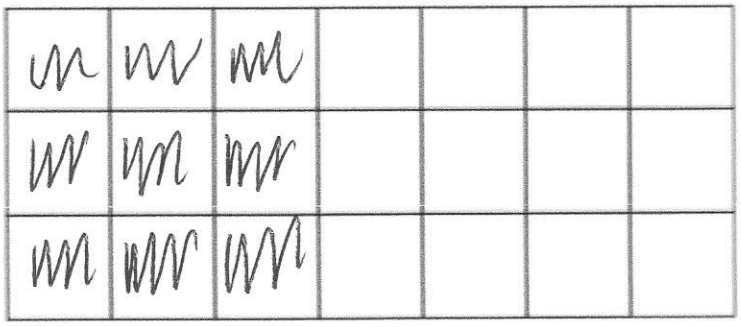
(1)

15. Write down three fractions that are equivalent to $\frac{3}{8}$

$\frac{6}{18}$ $\frac{9}{24}$ $\frac{12}{32}$ etc.

(3)

16.



Shade $\frac{3}{7}$ of the shape.

(1)

17. Some of the fractions below are equivalent.

Circle the equivalent fractions.

$\frac{1}{3}$ $\frac{2}{5}$ $\frac{2}{6}$ $\frac{3}{12}$ $\frac{5}{15}$

(2)

18. Below is a list of fractions.

$\frac{50}{60}$ ✓ $\frac{28}{36}$ ✗ $\frac{15}{18}$ ✓ $\frac{35}{42}$ ✓

One of the fractions is **not** equivalent to $\frac{5}{6}$

Write down which fraction.

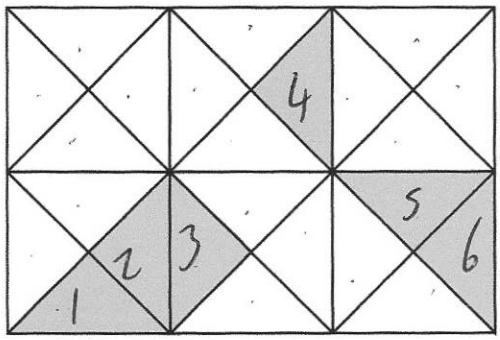
$\frac{28}{36}$

.....

(2)

19. What fraction of this shape is shaded?

24



Give your answer in its simplest form.

$\frac{6}{24} = \frac{1}{4}$

$\frac{1}{4}$

.....

(2)

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20. Write the fraction $\frac{21}{84}$ in its simplest form.

$\frac{21}{84} \overset{\div 7}{=} \frac{3}{12} \overset{\div 3}{=} \frac{1}{4}$

$\frac{1}{4}$

.....

(1)

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21. Write the fraction $\frac{75}{165}$ in its simplest form.

$5\overline{)75}$ $\quad$ $5\overline{)165}$

$\frac{15}{33} = \frac{5}{11}$

$\frac{5}{11}$

.....

(1)

22. Write the fraction $\frac{42}{70}$ in its simplest form.

42
—
70

3
—
5

.....

(1)

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23. Write the fraction $\frac{864}{924}$ in its simplest form.

72
—
77

.....

(1)

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24. Of 500 people, 100 wear glasses.

Write the number of people who **do not** wear glasses as a fraction of the total number of people.

Give your answer in its simplest form.

400
—
500

4
—
5

.....

(2)

25. There are 400 pupils in a primary school.
Of the 400 pupils, 88 play a musical instrument.

Express the number of pupils who play a musical instrument as a fraction of the 400 pupils.

Give your answer in its simplest form.

$\frac{88}{400} = \frac{22}{100} = \frac{11}{50}$

$\frac{11}{50}$

.....

(2)

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26. Express 50p as a fraction of £4

Give your answer in its simplest form.

$\frac{50}{400} = \frac{5}{40} = \frac{1}{8}$

$\frac{1}{8}$

.....

(2)

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27. In a bag there are 80 beads.
There are 35 yellow beads.
There are 17 red beads.
The rest of the beads are white.

$35 + 17 = 52$

$80 - 52 = 28$

Work out what fraction of the beads are white.
Give your answer in its simplest form.

$\frac{28}{80} = \frac{14}{40} = \frac{7}{20}$

$\frac{7}{20}$

.....

(2)

28. Last year the cost of a table was £180
This year the cost of the same table is £210

Write down the increase in cost as a fraction of last year's cost.

£30

$\frac{30}{180} = \frac{3}{18} = \frac{1}{6}$

$\frac{1}{6}$

.....

(2)

29. Four students attempt a puzzle.
Their times taken are shown below.

Student	Time Taken
Abigail	17.5 minutes
Dave	Quarter of an hour
Nia	850 seconds
Patrick	16 minutes

Seconds

1050

900

850

960

Work out $\frac{\text{shortest time taken}}{\text{longest time taken}}$

Give your answer in its simplest form.

$\frac{850}{1050} = \frac{17}{21}$

.....

(3)

30. Isla is 1.04m tall

Catherine is 80cm tall

Write Isla's height as a fraction of Catherine's height.

Give your answer in its simplest form.

$\frac{104}{80} = \frac{13}{10}$

$\frac{13}{10}$

.....

(2)