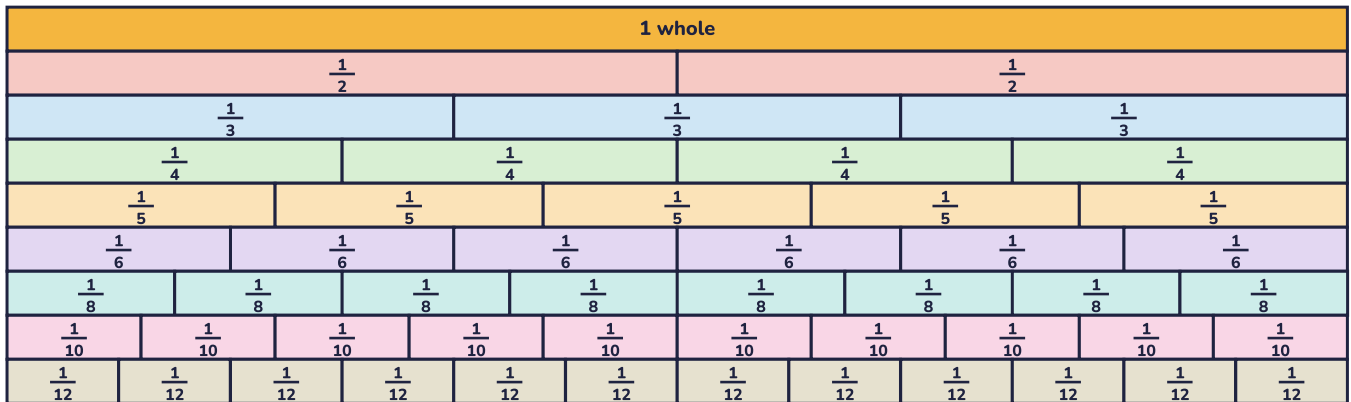


Fractions made easy

Equal parts! In $\frac{3}{5}$ the whole is cut into **5** equal parts (bottom number) and you have **3** (top number).



Of an amount

Divide by the bottom, times by the top.

$$\frac{3}{5} \text{ of } 40: 40 \div 5 = 8, 8 \times 3 = \mathbf{24}$$

Equivalent and simplest form

Do the same to the top and the bottom.

$$\frac{2}{3} = \frac{8}{12} (\times 4) \quad \frac{18}{24} = \frac{3}{4} (\div 6)$$

Comparing

Make the bottom numbers the same.

$$\frac{2}{3} = \frac{10}{15} \text{ is bigger than } \frac{3}{5} = \frac{9}{15}$$

Mixed numbers

$$11 \div 4 = 2 \text{ r } 3, \text{ so } \frac{11}{4} = 2 \frac{3}{4}$$

$$3 \times 5 + 2 = 17, \text{ so } 3 \frac{2}{5} = \frac{17}{5}$$

Add and subtract

Same bottoms first, then the tops.

$$\frac{1}{3} + \frac{1}{4} = \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

Multiply and divide

$$\frac{1}{4} \times \frac{1}{2} = \frac{1}{8} \text{ (top } \times \text{ top, bottom } \times \text{ bottom)}$$

$$\frac{1}{3} \div 2 = \frac{1}{6} \text{ (times the bottom by 2)}$$

Working backwards

$$\frac{1}{4} \text{ is } 9, \text{ so the whole is } 9 \times 4 = \mathbf{36}$$

$$\frac{2}{5} \text{ is } 14, \text{ so } \frac{1}{5} \text{ is } 7 \text{ and the whole is } \mathbf{35}$$

Watch out

Never add the bottom numbers.

$$\frac{1}{8} \text{ is smaller than } \frac{1}{4} \text{ (more, smaller parts).}$$

Fractions, decimals and percentages

$$\frac{1}{2} = 0.5 = \mathbf{50\%}$$

$$\frac{1}{4} = 0.25 = \mathbf{25\%}$$

$$\frac{3}{4} = 0.75 = \mathbf{75\%}$$

$$\frac{1}{5} = 0.2 = \mathbf{20\%}$$

$$\frac{1}{10} = 0.1 = \mathbf{10\%}$$

$$\frac{1}{8} = 0.125 = \mathbf{12.5\%}$$

$$\frac{3}{8} = 0.375 = \mathbf{37.5\%}$$

$$\frac{1}{100} = 0.01 = \mathbf{1\%}$$

The four operations

Give each answer in its simplest form. Write answers bigger than 1 (or less than -1) as mixed numbers.

Name _____

Date _____

Score _____ / 16

1. $\frac{23}{8} + \frac{3}{4} =$

2. $\frac{1}{4} + \frac{9}{4} =$

3. $-\frac{9}{7} + 1\frac{2}{3} =$

4. $\frac{13}{6} \div \frac{17}{6} =$

5. $1\frac{1}{6} \div \frac{7}{3} =$

6. $1\frac{2}{3} \div \frac{17}{8} =$

7. $3\frac{1}{5} - 2\frac{7}{8} =$

8. $-2\frac{1}{4} - 2\frac{3}{5} =$

9. $\frac{15}{8} \times \frac{3}{4} =$

10. $\frac{5}{6} + \frac{9}{10} =$

11. $\frac{1}{10} \times \frac{1}{2} =$

12. $1\frac{1}{3} - 3\frac{2}{3} =$

13. $2\frac{1}{4} - \frac{1}{2} =$

14. $\frac{1}{2} \div \frac{9}{4} =$

15. $\frac{13}{6} \times \frac{2}{7} =$

16. $-1\frac{1}{4} \times \frac{5}{7} =$

Change mixed numbers to improper fractions first. To divide, turn the second fraction upside down and multiply.

Fractions of and as fractions

Use fractions as operators, and write one amount as a fraction of another.

Name _____ Date _____ Score _____ / 18

Fractions of amounts

Some of these fractions are bigger than 1.

1. $\frac{1}{3}$ of 48 = _____

2. $\frac{9}{4}$ of 68 = _____

3. $\frac{1}{6}$ of 108 = _____

4. $\frac{11}{4}$ of 8 = _____

5. $\frac{3}{4}$ of 32 = _____

6. $\frac{7}{3}$ of 15 = _____

7. $\frac{3}{4}$ of 36 = _____

8. $\frac{4}{9}$ of 99 = _____

9. $\frac{1}{6}$ of 90 = _____

10. $\frac{17}{6}$ of 54 = _____

Write the first amount as a fraction of the second

Simplest form.

11. 165 minutes as a fraction of an hour

12. 1,500 ml as a fraction of a litre

13. 35 as a fraction of 60

14. 75 cm as a fraction of a metre

15. 25 minutes as a fraction of an hour

16. 25 as a fraction of 12

17. 70p as a fraction of £2

18. 600 g as a fraction of a kilogram

Make the units match first: 1 hour = 60 minutes, 1 m = 100 cm, £1 = 100p, 1 kg = 1,000 g and 1 litre = 1,000 ml.

Fractions and decimals

Every decimal on this sheet stops, so you can write it exactly as a fraction.

Name _____ Date _____ Score _____ / 20

Decimal to fraction Simplest form. Use an improper fraction if it's bigger than 1.

1. $0.5 =$

2. $0.325 =$

3. $2.87 =$

4. $0.1 =$

5. $1.68 =$

6. $3.55 =$

7. $0.25 =$

8. $0.97 =$

9. $3.5 =$

10. $0.05 =$

Fraction to decimal Divide the top by the bottom.

11. $\frac{7}{40} =$ _____

12. $\frac{7}{10} =$ _____

13. $\frac{37}{50} =$ _____

14. $\frac{1}{100} =$ _____

15. $\frac{19}{50} =$ _____

16. $\frac{31}{40} =$ _____

17. $\frac{4}{5} =$ _____

18. $\frac{77}{100} =$ _____

19. $\frac{39}{25} =$ _____

20. $\frac{33}{20} =$ _____

Fraction word problems

Read each problem carefully and show your working. Give fractions in their simplest form.

Name _____ Date _____ Score _____ / 8

1. A bag holds $3\frac{3}{4}$ kg of rice. How many $\frac{3}{4}$ kg portions can be made from it?

2. A train journey takes $1\frac{3}{4}$ hours. The bus ride after it takes $\frac{1}{6}$ of an hour. How long is the whole journey?

3. A ribbon is $3\frac{2}{3}$ m long. Isla cuts off $\frac{1}{6}$ m. How much ribbon is left?

4. A jug holds $\frac{1}{4}$ of a litre of juice. It is shared equally between 4 glasses. How much juice goes in each glass?

5. Sam runs $2\frac{2}{3}$ km and Priya runs $1\frac{2}{3}$ km. How much further does Sam run?

6. A water tank holds 190 litres when it is full. It is $\frac{9}{10}$ full. How many litres of water are in it?

7. $\frac{2}{3}$ of the 21 children at a swimming club can swim a length. How many children can't swim a length yet?

8. Isla has read $\frac{2}{5}$ of a book. That's 34 pages. How many pages are in the whole book?

The four operations

Answers are shown in red.

Name _____ Date _____

1. $\frac{23}{8} + \frac{3}{4} = 3\frac{5}{8}$

2. $\frac{1}{4} + \frac{9}{4} = 2\frac{1}{2}$

3. $-\frac{9}{7} + 1\frac{2}{3} = \frac{8}{21}$

4. $\frac{13}{6} \div \frac{17}{6} = \frac{13}{17}$

5. $1\frac{1}{6} \div \frac{7}{3} = \frac{1}{2}$

6. $1\frac{2}{3} \div \frac{17}{8} = \frac{40}{51}$

7. $3\frac{1}{5} - 2\frac{7}{8} = \frac{13}{40}$

8. $-2\frac{1}{4} - 2\frac{3}{5} = -4\frac{17}{20}$

9. $\frac{15}{8} \times \frac{3}{4} = 1\frac{13}{32}$

10. $\frac{5}{6} + \frac{9}{10} = 1\frac{11}{15}$

11. $\frac{1}{10} \times \frac{1}{2} = \frac{1}{20}$

12. $1\frac{1}{3} - 3\frac{2}{3} = -2\frac{1}{3}$

13. $2\frac{1}{4} - \frac{1}{2} = 1\frac{3}{4}$

14. $\frac{1}{2} \div \frac{9}{4} = \frac{2}{9}$

15. $\frac{13}{6} \times \frac{2}{7} = \frac{13}{21}$

16. $-1\frac{1}{4} \times \frac{5}{7} = -\frac{25}{28}$

Change mixed numbers to improper fractions first. To divide, turn the second fraction upside down and multiply.

Fractions of and as fractions

Answers are shown in red.

Name _____ Date _____

Fractions of amounts

 Some of these fractions are bigger than 1.

1. $\frac{1}{3}$ of 48 = 16

2. $\frac{9}{4}$ of 68 = 153

3. $\frac{1}{6}$ of 108 = 18

4. $\frac{11}{4}$ of 8 = 22

5. $\frac{3}{4}$ of 32 = 24

6. $\frac{7}{3}$ of 15 = 35

7. $\frac{3}{4}$ of 36 = 27

8. $\frac{4}{9}$ of 99 = 44

9. $\frac{1}{6}$ of 90 = 15

10. $\frac{17}{6}$ of 54 = 153

Write the first amount as a fraction of the second

 Simplest form.

11. 165 minutes as a fraction of an hour

$\frac{11}{4}$

12. 1,500 ml as a fraction of a litre

$\frac{3}{2}$

13. 35 as a fraction of 60

$\frac{7}{12}$

14. 75 cm as a fraction of a metre

$\frac{3}{4}$

15. 25 minutes as a fraction of an hour

$\frac{5}{12}$

16. 25 as a fraction of 12

$\frac{25}{12}$

17. 70p as a fraction of £2

$\frac{7}{20}$

18. 600 g as a fraction of a kilogram

$\frac{3}{5}$

Make the units match first: 1 hour = 60 minutes, 1 m = 100 cm, £1 = 100p, 1 kg = 1,000 g and 1 litre = 1,000 ml.

Fractions and decimals

Answers are shown in red.

Name _____ Date _____

Decimal to fraction Simplest form. Use an improper fraction if it's bigger than 1.

1. $0.5 = \frac{1}{2}$

2. $0.325 = \frac{13}{40}$

3. $2.87 = \frac{287}{100}$

4. $0.1 = \frac{1}{10}$

5. $1.68 = \frac{42}{25}$

6. $3.55 = \frac{71}{20}$

7. $0.25 = \frac{1}{4}$

8. $0.97 = \frac{97}{100}$

9. $3.5 = \frac{7}{2}$

10. $0.05 = \frac{1}{20}$

Fraction to decimal Divide the top by the bottom.

11. $\frac{7}{40} = 0.175$

12. $\frac{7}{10} = 0.7$

13. $\frac{37}{50} = 0.74$

14. $\frac{1}{100} = 0.01$

15. $\frac{19}{50} = 0.38$

16. $\frac{31}{40} = 0.775$

17. $\frac{4}{5} = 0.8$

18. $\frac{77}{100} = 0.77$

19. $\frac{39}{25} = 1.56$

20. $\frac{33}{20} = 1.65$

Fraction word problems

Answers are shown in red.

Name _____

Date _____

1. A bag holds $3\frac{3}{4}$ kg of rice. How many $\frac{3}{4}$ kg portions can be made from it?

5 portions

2. A train journey takes $1\frac{3}{4}$ hours. The bus ride after it takes $\frac{1}{6}$ of an hour. How long is the whole journey?

$1\frac{11}{12}$ hours

3. A ribbon is $3\frac{2}{3}$ m long. Isla cuts off $\frac{1}{6}$ m. How much ribbon is left?

$3\frac{1}{2}$ m

4. A jug holds $\frac{1}{4}$ of a litre of juice. It is shared equally between 4 glasses. How much juice goes in each glass?

$\frac{1}{16}$ litre

5. Sam runs $2\frac{2}{3}$ km and Priya runs $1\frac{2}{3}$ km. How much further does Sam run?

1 km

6. A water tank holds 190 litres when it is full. It is $\frac{9}{10}$ full. How many litres of water are in it?

171 litres

7. $\frac{2}{3}$ of the 21 children at a swimming club can swim a length. How many children can't swim a length yet?

7 children

8. Isla has read $\frac{2}{5}$ of a book. That's 34 pages. How many pages are in the whole book?

85 pages