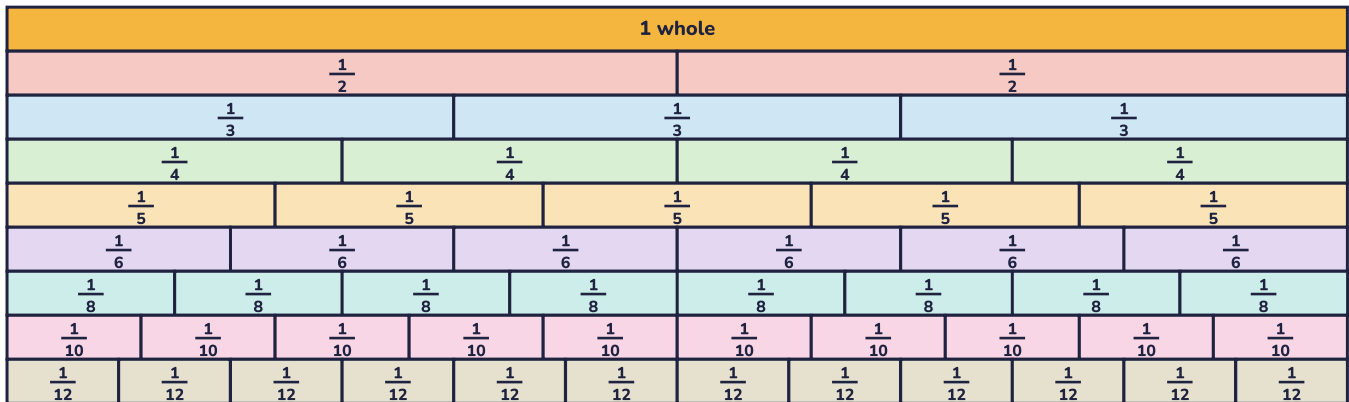


Fractions made easy

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

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

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

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

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

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

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

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

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

Equivalent fractions and simplifying

Multiply or divide the top and the bottom by the same number.

Name _____

Date _____

Score _____ / 18

Find the missing number

1. $\frac{7}{10} = \frac{\boxed{}}{100}$

2. $\frac{1}{6} = \frac{\boxed{}}{12}$

3. $\frac{1}{5} = \frac{\boxed{}}{40}$

4. $\frac{5}{12} = \frac{\boxed{}}{96}$

5. $\frac{27}{45} = \frac{\boxed{}}{5}$

6. $\frac{3}{4} = \frac{15}{\boxed{}}$

7. $\frac{1}{4} = \frac{10}{\boxed{}}$

8. $\frac{4}{25} = \frac{\boxed{}}{100}$

Simplify fully Divide the top and bottom by the same number until you can't go any further.

9. $\frac{3}{12} = \boxed{}$

10. $\frac{40}{70} = \boxed{}$

11. $\frac{55}{88} = \boxed{}$

12. $\frac{2}{6} = \boxed{}$

13. $\frac{6}{12} = \boxed{}$

14. $\frac{55}{132} = \boxed{}$

15. $\frac{60}{108} = \boxed{}$

16. $\frac{55}{99} = \boxed{}$

17. $\frac{44}{55} = \boxed{}$

18. $\frac{4}{18} = \boxed{}$

Mixed numbers

Change improper fractions into mixed numbers, and mixed numbers into improper fractions.

Name _____ Date _____ Score _____ / 16

Improper fraction to mixed number

 How many wholes? What is left over?

1. $\frac{33}{8} =$

2. $\frac{17}{3} =$

3. $\frac{16}{9} =$

4. $\frac{23}{10} =$

5. $\frac{49}{12} =$

6. $\frac{53}{9} =$

7. $\frac{65}{11} =$

8. $\frac{22}{5} =$

Mixed number to improper fraction

 Wholes × bottom number, then add the top.

9. $4\frac{7}{11} =$

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

11. $4\frac{6}{7} =$

12. $4\frac{9}{11} =$

13. $5\frac{1}{6} =$

14. $5\frac{1}{11} =$

15. $2\frac{1}{6} =$

16. $5\frac{1}{2} =$

Add and subtract fractions

Make the bottom numbers the same first. Give answers in their simplest form, and write answers bigger than 1 as mixed numbers.

Name _____ Date _____ Score _____ / 16

One bottom number fits into the other

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

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

3. $\frac{5}{6} - \frac{11}{18} =$

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

5. $\frac{4}{5} - \frac{7}{10} =$

6. $\frac{7}{15} - \frac{2}{5} =$

Different bottom numbers

7. $\frac{4}{7} + \frac{2}{3} =$

8. $\frac{2}{5} + \frac{2}{3} =$

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

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

11. $\frac{1}{4} + \frac{7}{9} =$

12. $\frac{3}{7} + \frac{3}{5} =$

Mixed numbers

13. $1\frac{1}{4} + 3\frac{3}{4} =$

14. $3\frac{7}{8} + 1\frac{1}{3} =$

15. $2\frac{5}{8} + 2\frac{1}{3} =$

16. $2\frac{1}{6} + 2\frac{2}{3} =$

Multiply and divide

Give answers in their simplest form. Write answers bigger than 1 as mixed numbers.

Name _____ Date _____ Score _____ / 16

Multiply by a whole number

1. $\frac{5}{9} \times 4 =$

2. $\frac{1}{3} \times 5 =$

3. $2\frac{2}{5} \times 4 =$

4. $\frac{5}{6} \times 5 =$

5. $1\frac{1}{2} \times 4 =$

6. $3\frac{1}{5} \times 4 =$

Multiply two fractions

Tops times tops, bottoms times bottoms.

7. $\frac{3}{4} \times \frac{1}{2} =$

8. $\frac{1}{3} \times \frac{1}{6} =$

9. $\frac{1}{4} \times \frac{4}{5} =$

10. $\frac{3}{4} \times \frac{3}{4} =$

11. $\frac{2}{3} \times \frac{1}{5} =$

12. $\frac{1}{2} \times \frac{3}{4} =$

Divide by a whole number

13. $\frac{2}{3} \div 4 =$

14. $\frac{5}{6} \div 3 =$

15. $\frac{3}{5} \div 2 =$

16. $\frac{3}{4} \div 5 =$

Fractions of amounts

Divide by the bottom number, then times by the top number.

Name _____

Date _____

Score _____ / 16

1. $\frac{1}{5}$ of 25 = _____

2. $\frac{3}{10}$ of 230 = _____

3. $\frac{1}{5}$ of 125 = _____

4. $\frac{5}{7}$ of 126 = _____

5. $\frac{1}{6}$ of 30 = _____

6. $\frac{5}{8}$ of 40 = _____

7. $\frac{1}{3}$ of 42 = _____

8. $\frac{1}{10}$ of 30 = _____

9. $\frac{5}{6}$ of 36 = _____

10. $\frac{3}{7}$ of 21 = _____

11. $\frac{3}{4}$ of 68 = _____

12. $\frac{4}{9}$ of 153 = _____

Working backwards Find one part first, then the whole.

13. $\frac{1}{3}$ of a number is 10. What is the number? _____

14. A bottle is $\frac{1}{8}$ full. It has 15 ml of water in it. How much does the full bottle hold? _____

15. $\frac{1}{3}$ of a ribbon is 8 cm long. How long is the whole ribbon? _____

16. Zara has read $\frac{1}{3}$ of a book. That's 12 pages. How many pages are in the book? _____

Fractions, decimals and percentages

Each row shows one amount. Fill in the two missing ways of writing it.

Name _____ Date _____ Score _____ / 20

Fraction	Decimal	Percentage
	_____	84%
	_____	1%
	0.4	_____
$\frac{11}{20}$	_____	_____
$\frac{3}{20}$	_____	_____
$\frac{3}{5}$	_____	_____
$\frac{5}{8}$	_____	_____
	0.45	_____
	_____	49%
	0.8	_____

A fraction is a division: $\frac{3}{8} = 3 \div 8 = 0.375$. Write fractions in their simplest form.

Equivalent fractions and simplifying

Answers are shown in red.

Name _____

Date _____

Find the missing number

1. $\frac{7}{10} = \frac{\boxed{70}}{100}$

2. $\frac{1}{6} = \frac{\boxed{2}}{12}$

3. $\frac{1}{5} = \frac{\boxed{8}}{40}$

4. $\frac{5}{12} = \frac{\boxed{40}}{96}$

5. $\frac{27}{45} = \frac{\boxed{3}}{5}$

6. $\frac{3}{4} = \frac{15}{\boxed{20}}$

7. $\frac{1}{4} = \frac{10}{\boxed{40}}$

8. $\frac{4}{25} = \frac{\boxed{16}}{100}$

Simplify fully Divide the top and bottom by the same number until you can't go any further.

9. $\frac{3}{12} = \frac{\boxed{1}}{\boxed{4}}$

10. $\frac{40}{70} = \frac{\boxed{4}}{\boxed{7}}$

11. $\frac{55}{88} = \frac{\boxed{5}}{\boxed{8}}$

12. $\frac{2}{6} = \frac{\boxed{1}}{\boxed{3}}$

13. $\frac{6}{12} = \frac{\boxed{1}}{\boxed{2}}$

14. $\frac{55}{132} = \frac{\boxed{5}}{\boxed{12}}$

15. $\frac{60}{108} = \frac{\boxed{5}}{\boxed{9}}$

16. $\frac{55}{99} = \frac{\boxed{5}}{\boxed{9}}$

17. $\frac{44}{55} = \frac{\boxed{4}}{\boxed{5}}$

18. $\frac{4}{18} = \frac{\boxed{2}}{\boxed{9}}$

Mixed numbers

Answers are shown in red.

Name _____ Date _____

Improper fraction to mixed number

 How many wholes? What is left over?

1. $\frac{33}{8} = 4\frac{1}{8}$

2. $\frac{17}{3} = 5\frac{2}{3}$

3. $\frac{16}{9} = 1\frac{7}{9}$

4. $\frac{23}{10} = 2\frac{3}{10}$

5. $\frac{49}{12} = 4\frac{1}{12}$

6. $\frac{53}{9} = 5\frac{8}{9}$

7. $\frac{65}{11} = 5\frac{10}{11}$

8. $\frac{22}{5} = 4\frac{2}{5}$

Mixed number to improper fraction

 Wholes × bottom number, then add the top.

9. $4\frac{7}{11} = \frac{51}{11}$

10. $2\frac{1}{2} = \frac{5}{2}$

11. $4\frac{6}{7} = \frac{34}{7}$

12. $4\frac{9}{11} = \frac{53}{11}$

13. $5\frac{1}{6} = \frac{31}{6}$

14. $5\frac{1}{11} = \frac{56}{11}$

15. $2\frac{1}{6} = \frac{13}{6}$

16. $5\frac{1}{2} = \frac{11}{2}$

Add and subtract fractions

Answers are shown in red.

Name _____ Date _____

One bottom number fits into the other

$$1. \frac{1}{2} + \frac{1}{4} = \boxed{\frac{3}{4}}$$

$$2. \frac{1}{3} + \frac{5}{6} = \boxed{1\frac{1}{6}}$$

$$3. \frac{5}{6} - \frac{11}{18} = \boxed{\frac{2}{9}}$$

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

$$5. \frac{4}{5} - \frac{7}{10} = \boxed{\frac{1}{10}}$$

$$6. \frac{7}{15} - \frac{2}{5} = \boxed{\frac{1}{15}}$$

Different bottom numbers

$$7. \frac{4}{7} + \frac{2}{3} = \boxed{1\frac{5}{21}}$$

$$8. \frac{2}{5} + \frac{2}{3} = \boxed{1\frac{1}{15}}$$

$$9. \frac{2}{3} - \frac{3}{7} = \boxed{\frac{5}{21}}$$

$$10. \frac{1}{3} + \frac{4}{5} = \boxed{1\frac{2}{15}}$$

$$11. \frac{1}{4} + \frac{7}{9} = \boxed{1\frac{1}{36}}$$

$$12. \frac{3}{7} + \frac{3}{5} = \boxed{1\frac{1}{35}}$$

Mixed numbers

$$13. 1\frac{1}{4} + 3\frac{3}{4} = \boxed{5}$$

$$14. 3\frac{7}{8} + 1\frac{1}{3} = \boxed{5\frac{5}{24}}$$

$$15. 2\frac{5}{8} + 2\frac{1}{3} = \boxed{4\frac{23}{24}}$$

$$16. 2\frac{1}{6} + 2\frac{2}{3} = \boxed{4\frac{5}{6}}$$

Multiply and divide

Answers are shown in red.

Name _____ Date _____

Multiply by a whole number

1. $\frac{5}{9} \times 4 = 2\frac{2}{9}$

2. $\frac{1}{3} \times 5 = 1\frac{2}{3}$

3. $2\frac{2}{5} \times 4 = 9\frac{3}{5}$

4. $\frac{5}{6} \times 5 = 4\frac{1}{6}$

5. $1\frac{1}{2} \times 4 = 6$

6. $3\frac{1}{5} \times 4 = 12\frac{4}{5}$

Multiply two fractions

Tops times tops, bottoms times bottoms.

7. $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$

8. $\frac{1}{3} \times \frac{1}{6} = \frac{1}{18}$

9. $\frac{1}{4} \times \frac{4}{5} = \frac{1}{5}$

10. $\frac{3}{4} \times \frac{3}{4} = \frac{9}{16}$

11. $\frac{2}{3} \times \frac{1}{5} = \frac{2}{15}$

12. $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$

Divide by a whole number

13. $\frac{2}{3} \div 4 = \frac{1}{6}$

14. $\frac{5}{6} \div 3 = \frac{5}{18}$

15. $\frac{3}{5} \div 2 = \frac{3}{10}$

16. $\frac{3}{4} \div 5 = \frac{3}{20}$

Fractions of amounts

Answers are shown in red.

Name _____ Date _____

1. $\frac{1}{5}$ of 25 = 5

2. $\frac{3}{10}$ of 230 = 69

3. $\frac{1}{5}$ of 125 = 25

4. $\frac{5}{7}$ of 126 = 90

5. $\frac{1}{6}$ of 30 = 5

6. $\frac{5}{8}$ of 40 = 25

7. $\frac{1}{3}$ of 42 = 14

8. $\frac{1}{10}$ of 30 = 3

9. $\frac{5}{6}$ of 36 = 30

10. $\frac{3}{7}$ of 21 = 9

11. $\frac{3}{4}$ of 68 = 51

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

Working backwards Find one part first, then the whole.

13. $\frac{1}{3}$ of a number is 10. What is the number? 30

14. A bottle is $\frac{1}{8}$ full. It has 15 ml of water in it. How much does the full bottle hold? 120 ml

15. $\frac{1}{3}$ of a ribbon is 8 cm long. How long is the whole ribbon? 24 cm

16. Zara has read $\frac{1}{3}$ of a book. That's 12 pages. How many pages are in the book? 36 pages

Fractions, decimals and percentages

Answers are shown in red.

Name _____ Date _____

Fraction	Decimal	Percentage
$\frac{21}{25}$	<u>0.84</u>	84%
$\frac{1}{100}$	<u>0.01</u>	1%
$\frac{2}{5}$	0.4	<u>40%</u>
$\frac{11}{20}$	<u>0.55</u>	<u>55%</u>
$\frac{3}{20}$	<u>0.15</u>	<u>15%</u>
$\frac{3}{5}$	<u>0.6</u>	<u>60%</u>
$\frac{5}{8}$	<u>0.625</u>	<u>62.5%</u>
$\frac{9}{20}$	0.45	<u>45%</u>
$\frac{49}{100}$	<u>0.49</u>	49%
$\frac{4}{5}$	0.8	<u>80%</u>

A fraction is a division: $\frac{3}{8} = 3 \div 8 = 0.375$. Write fractions in their simplest form.