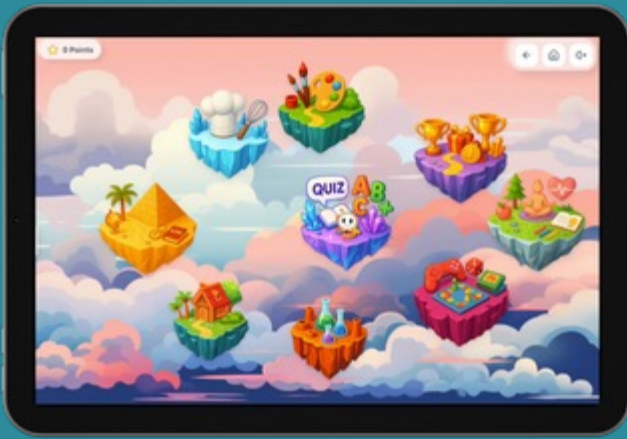


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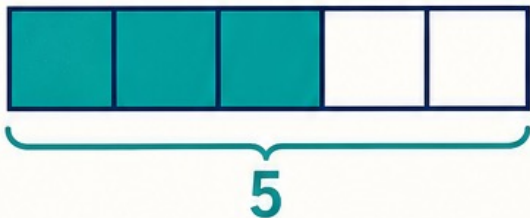
Fractions of Whole Numbers - Year 6

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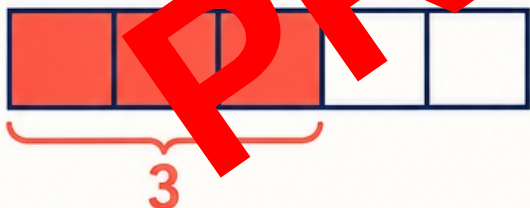


FRACTION FINDER

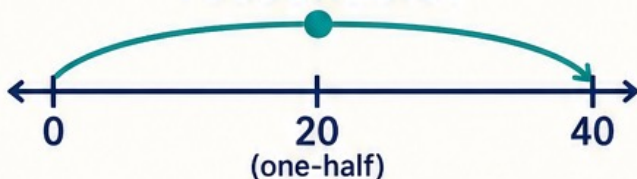
1 **DIVIDE**
by the
denominator



2 **MULTIPLY**
by the
numerator



3 **CHECK:**
Is the answer
reasonable?



Find $\frac{3}{5}$ of 40

$$40 \div 5 = 8$$

$$8 \times 3 = 24$$

$$\frac{3}{5} \text{ of } 40 = 24$$



24 is less than 40,
and $\frac{3}{5}$ is more
than one-half.

$$\frac{3}{5} \text{ of } 40 = \frac{3}{5} \times 40$$

FRACTION MATCH-UP

Cut out the cards. Match each fraction expression to its answer.

$\frac{1}{3}$ of 36	21	$\frac{5}{8}$ of 64	36
63	$\frac{2}{5}$ of 45	12	$\frac{4}{9}$ of 81
$\frac{3}{4}$ of 28	40	$\frac{7}{10}$ of 90	18

FRACTION TRAIL

Roll, move and solve.

Correct star. Not yet: move back one space.



START ▶

1 $\frac{1}{2}$ of 30

2 $\frac{3}{4}$ of 32

3 $\frac{2}{3}$ of 27

4 $\frac{5}{8}$ of 48

5 $\frac{4}{5}$ of 50

6 $\frac{5}{6}$ of 54

7 $\frac{3}{7}$ of 56

8 $\frac{7}{10}$ of 80

9 $\frac{2}{9}$ of 90

10 $\frac{7}{8}$ of 64

11 $\frac{4}{11}$ of 121

12 $\frac{5}{12}$ of 96

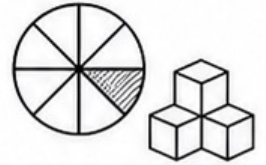
FINISH ★

Answers: 15, 24, 18, 30, 40, 56, 24, 45, 20, 56, 44, 40.

UNIT FRACTION FOUNDATIONS

Name: _____

Date: _____



To find a unit fraction, divide the whole by the denominator.

Show your working.

1. $\frac{1}{2}$ of 38 = _____

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

3. $\frac{1}{4}$ of 68 = _____

4. $\frac{1}{5}$ of 95 = _____

5. $\frac{1}{6}$ of 12 = _____

6. $\frac{1}{8}$ of 200 = _____

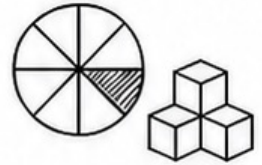
CHALLENGE

Explain how you know $\frac{1}{4}$ of 92 is 23.

UNIT FRACTION FOUNDATIONS

ANSWERS

Date: _____



To find a unit fraction, divide the whole by the denominator.

Show your working.

1. $\frac{1}{2}$ of 38 = 19

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

3. $\frac{1}{4}$ of 68 = 17

4. $\frac{1}{5}$ of 95 = 19

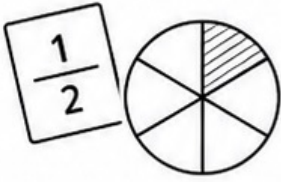
5. $\frac{1}{6}$ of 120 = 20

6. $\frac{1}{8}$ of 200 = 25

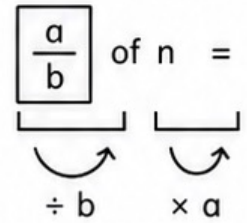
CHALLENGE

Explain how you know $\frac{1}{4}$ of 92 is 23.

$92 \div 4 = 23$, so one of four equal parts is 23.



NUMERATOR BUILDER



Name: _____ Date: _____

Divide by the denominator, then multiply by the numerator.

Show your working.

1. $\frac{3}{4}$ of 64 = _____

2. $\frac{2}{5}$ of 85 = _____

3. $\frac{5}{6}$ of 72 = _____

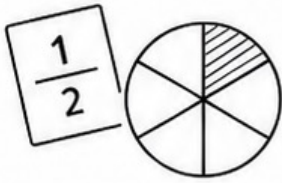
4. $\frac{7}{8}$ of 96 = _____

5. $\frac{4}{9}$ of 117 = _____

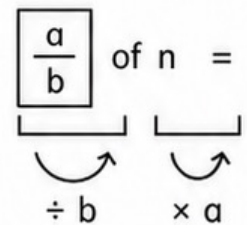
6. $\frac{5}{12}$ of 144 = _____

ERROR DETECTIVE

Mila says $\frac{3}{5}$ of 40 is 24 because $40 \div 5 \times 3 = 24$. Is she correct? Explain.



NUMERATOR BUILDER



ANSWERS

Date: _____

Divide by the denominator, then multiply by the numerator.

Show your working.

1. $\frac{3}{4}$ of 64 = 48

2. $\frac{2}{5}$ of 85 = 34

3. $\frac{5}{6}$ of 72 = 60

4. $\frac{7}{8}$ of 96 = 84

5. $\frac{4}{9}$ of 117 = 52

6. $\frac{5}{12}$ of 144 = 60

ERROR DETECTIVE

Mila says $\frac{3}{5}$ of 40 is 24 because $40 \div 5 \times 3 = 24$. Is she correct? Explain.

Yes. She divided 40 by 5 to find one-fifth, then multiplied by 3.

FRACTIONS WITH UNITS

Name: _____

Date: _____

Calculate each fraction. Include the correct unit in every answer.

1. $\frac{3}{4}$ of \$84 = _____



2. $\frac{2}{5}$ of 150 g = _____



3. $\frac{7}{10}$ of 2 L = _____



4. $\frac{5}{6}$ of 90 minutes = _____



5. $\frac{3}{8}$ of 240 m = _____



6. $\frac{4}{5}$ of 1.5 kg = _____



REFLECTION

Which question was most efficient to solve mentally? Why?

FRACTIONS WITH UNITS

ANSWERS

Date: _____

Calculate each fraction. Include the correct unit in every answer.

1. $\frac{3}{4}$ of \$84 = \$63



2. $\frac{2}{5}$ of 150 g = 60 g



3. $\frac{7}{10}$ of 2 L = 1.4 L



4. $\frac{5}{6}$ of 90 minutes = 75 minutes



5. $\frac{3}{8}$ of 240 m = 90 m



6. $\frac{4}{5}$ of 1.5 kg = 1.2 kg



REFLECTION

Which question was most efficient to solve mentally? Why?

Answers will vary. A valid response names an efficient mental strategy.



EFFICIENT STRATEGIES



Name: _____

Date: _____

Circle M for mental or C for calculator. Then solve and show your strategy.

1. $\frac{3}{4}$ of 120 = _____ M C

2. $\frac{7}{8}$ of 1,456 = _____ M C

3. $\frac{25}{100}$ of 360 = _____ M C

4. $\frac{11}{15}$ of 2,430 = _____ M C

5. $\frac{2}{3}$ of 9 = _____ M C

6. $\frac{13}{20}$ of 2,760 = _____ M C

REFLECTION

Explain one strategy choice.



EFFICIENT STRATEGIES



ANSWERS

Date: _____

Circle M for mental or C for calculator. Then solve and show your strategy.

1. $\frac{3}{4}$ of 120 = 90 (M) C

2. $\frac{7}{8}$ of 1,456 = 1,274 M (C)

3. $\frac{25}{100}$ of 360 = 90 (M) C

4. $\frac{11}{15}$ of 2,430 = 1,782 M (C)

5. $\frac{2}{3}$ of 99 = 66 (M) C

6. $\frac{13}{20}$ of 2,760 = 1,794 M (C)

REFLECTION

Explain one strategy choice.

Example: $\frac{3}{4}$ of 120 is mental because $120 \div 4 = 30$, then $30 \times 3 = 90$.

FRACTION PROBLEM SOLVING

Name: _____

Date: _____

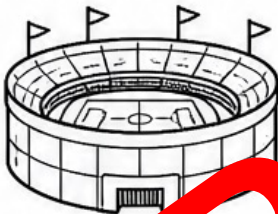
Show your working and write each answer in a sentence.



1. A library receives 96 new books. Three-eighths are science books. How many science books are there?



2. Maya saves \$180 and spends two-fifths of a gift. How much money remains?



3. A stadium has 360 seats. Seven-ninths are filled. How many seats are empty?



4. A hike is 24 km. A team completes five-eighths before lunch. How far remains?



5. A 150 L tank is four-fifths full. Then 30 L is used. How much water remains?

FRACTION PROBLEM SOLVING

ANSWERS

Date: _____

Show your working and write each answer in a sentence.



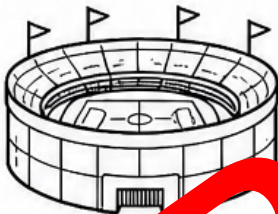
1. A library receives 96 new books. Three-eighths are science books. How many science books are there?

36 science books.



2. Maya saves \$180 and spends two-fifths of a gift. How much money remains?

\$108 remains.



3. A stadium has 360 seats. Seven-ninths are filled. How many seats are empty?

80 seats are empty.



4. A hike is 24 km. A team completes five-eighths before lunch. How far remains?

9 km remains.



5. A 150 L tank is four-fifths full. Then 30 L is used. How much water remains?

90 L remains.

FRACTION MISSION CHECKPOINT

Community Sports Day



Name: _____ Date: _____ Score: ____ / 10

Show your working. Use a calculator only where it helps.

SECTION A – FLUENCY

1. $\frac{1}{4}$ of 84 = _____
2. $\frac{5}{6}$ of 72 = _____
3. $\frac{7}{10}$ of 350 = _____
4. Write an expression that finds $\frac{3}{8}$ of 96: _____
5. True or false? To find $\frac{2}{3}$ of 45, divide 45 by 2 then multiply by 3. _____
6. $\frac{4}{5} \times 65 =$ _____

SECTION B – APPLICATION

7. The sports club raises £40 and spends three-eighths on supplies. How much is spent?
8. A 96-minute session uses five-eighths for drills. How many minutes is that?
9. Of 132 athletes, seven-elevenths are juniors. How many juniors are there?
10. There are 250 water bottles. Two-fifths are used in the morning and 30 more in the afternoon. How many remain?

FRACTION MISSION CHECKPOINT

Community Sports Day

ANSWERS

Date: _____ Score: 10 / 10



Show your working. Use a calculator only where it helps.

SECTION A – FLUENCY

1. $\frac{1}{4}$ of 84 = 21

2. $\frac{5}{6}$ of 72 = 60

3. $\frac{7}{10}$ of 350 = 245

4. Write an expression that finds $\frac{3}{8}$ of 96: $96 \div 8 \times 3$

5. True or false? To find $\frac{2}{3}$ of 45, divide 45 by 2 then multiply by 3. False

$45 \div 3 \times 2 = 30$

6. $\frac{4}{5} \times 65 =$ 52

SECTION B – APPLY

7. The sports club raises \$240 and spends three-eighths on supplies. How much is spent?

\$90

8. A 96-minute session uses five-eighths for drills. How many minutes is that?

60 minutes

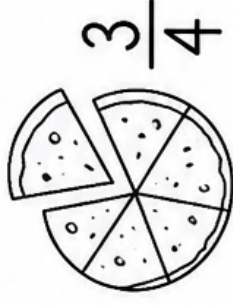
9. Of 132 athletes, seven-elevenths are juniors. How many juniors are there?

84 juniors

10. There are 250 water bottles. Two-fifths are used in the morning and 30 more in the afternoon. How many remain?

120 bottles remain

FRACTIONS OF WHOLE NUMBERS RUBRIC

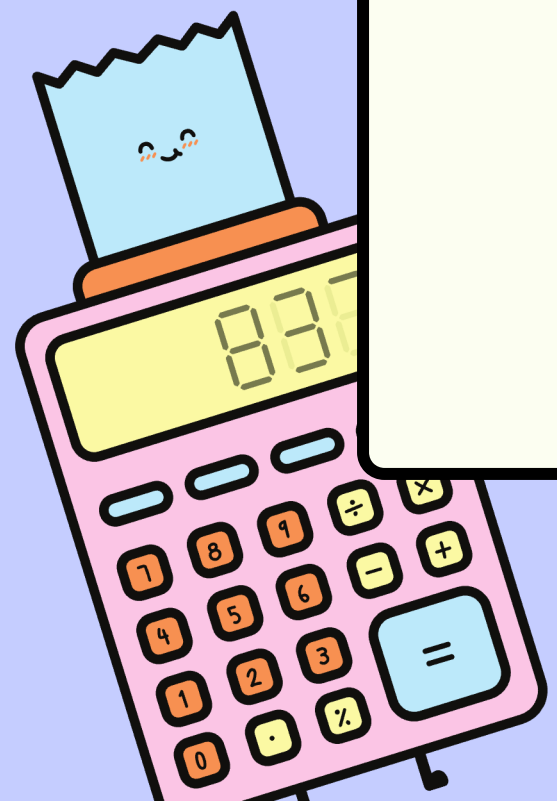
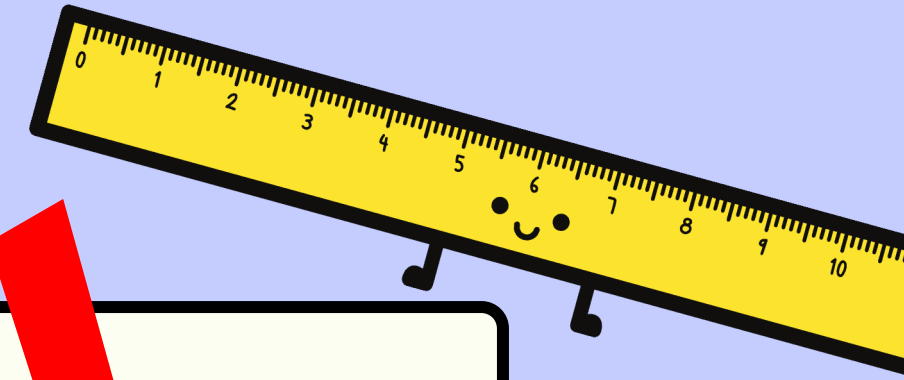
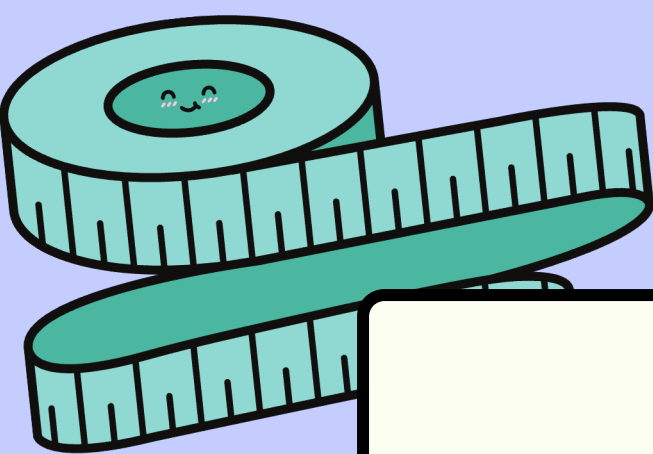


$$\frac{3}{4}$$

Student: _____ Date: _____

CRITERIA	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Finds unit fractions	needs support or incomplete	correct on some simple examples	generally accurate using the taught method	accurate, efficient and clearly explained	flexible, justified and independently checked
Finds non-unit fractions	needs support or incomplete	correct on some simple examples	generally accurate using the taught method	accurate, efficient and clearly explained	flexible, justified and independently checked
Uses notation and efficient strategies	needs support or incomplete	correct on some simple examples	generally accurate using the taught method	accurate, efficient and clearly explained	flexible, justified and independently checked
Solves contextual and multi-step problems	needs support or incomplete	correct on some simple examples	generally accurate using the taught method	accurate, efficient and clearly explained	flexible, justified and independently checked
Explains and checks reasoning	needs support or incomplete	correct on some simple examples	generally accurate using the taught method	accurate, efficient and clearly explained	flexible, justified and independently checked

Teacher feedback: _____



PREVIEW

Fractions of Whole Numbers



Learning Intention & Success Criteria

Today we will use efficient strategies to find fractions of whole-number quantities.

- Divide the whole by the denominator.
- Multiply one equal part by the numerator.
- Label units and check whether the answer is reasonable.



Warm-Up

Work with a partner.

- Find $\frac{1}{2}$ of 18.
- Find $\frac{1}{4}$ of 24.
- Find $\frac{3}{5}$ of 20.

Explain what the denominator and numerator tell you.



Divide → Multiply → Check

1. Divide the whole by the denominator to find one equal part.
2. Multiply that part by the numerator.
3. Check the size, units and reasonableness of the answer.

Example: $\frac{3}{4}$ of 28 → $28 \div 4 = 7$ × 3 = 21.



Step 1: Read the Denominator

In $\frac{3}{4}$, the denominator is 4.

It tells us to split the whole into 4 equal groups.

For $\frac{3}{4}$ of 28:

$$28 \div 4 = 7$$

One quarter of 28 is 7.



Worked Example: $\frac{1}{4}$ of 28

Whole: 28

Equal groups: 4

One group: $28 \div 4 = 7$

$\frac{1}{4}$ of 28 = 7

Check: 1 group of 7 make 28.



Step 2: Read the Numerator

In $\frac{3}{4}$, the numerator is 3.

It tells us to combine 3 of the equal group

One quarter of 28 is 7.

Three quarters: $7 \times 3 = 21$



Worked Example: $\frac{3}{4}$ of 28

$$28 \div 4 = 7$$

$$7 \times 3 = 21$$

So, $\frac{3}{4}$ of 28 = 21.

Check: 21 is less than 28 and $\frac{3}{4}$ is less than one whole.



The Meaning of 'of'

The word of means multiply in this context.

$$\frac{3}{4} \text{ of } 28 = \frac{3}{4} \times 28$$

A useful calculation order is:

$$28 \div 4 \times 3 = 21.$$

Divide by the denominator, then multiply by the numerator.



Money Example

Find $\frac{2}{5}$ of \$70.

$$\$70 \div 5 = \$14$$

$$\$14 \times 2 = \$28$$

$$\frac{2}{5} \text{ of } \$70 = \$28.$$

Keep the dollar unit in every step.



Measured Quantities

Use the same strategy with different units.

- $\frac{3}{4}$ of 60 minutes = 45 minutes
- $\frac{2}{5}$ of 35 kg = 14 kg
- $\frac{5}{8}$ of 24 m = 15 m
- $\frac{3}{10}$ of 40 L = 12 L

Always include the correct unit.



Efficient Mental Strategies

Look for friendly facts before calculating.

- Half: divide by 2
- Quarter: halve, then halve again
- Tenth: divide by 10
- Factor first: $3/8$ or $7 \rightarrow 7 \div 8 \times 3$

Choose a method you can explain.



When a Calculator Helps

A calculator helps when the whole is large or awkward.

Example: $\frac{7}{12}$ of 1,008

$$1,008 \div 12 \times 7 = 588$$

Estimate first: a little more than half of 1,008 should be just over 504.

Then explore with 500 to see if it works.



A Multi-Step Problem

Theo has 84 cards and gives $\frac{3}{7}$ away. How many remain?

Fraction given: $84 \div 7 \times 3 = 36$ cards

Amount remaining: $84 - 36 = 48$ cards

Answer the question asked – not just the first calculation.



Error Analysis

Claim: $\frac{2}{3}$ of 45 = 67.5 because $45 \div 2 \times 3 = 67.5$

What went wrong?

The whole was divided by the numerator instead of the denominator.

Correct: $45 \div 3 \times 2 = 30$.



Guided Practice

Solve each one. Say what you divide by first and what you divide.

- $\frac{2}{5}$ of 35
- $\frac{3}{8}$ of 64
- $\frac{7}{10}$ of \$90

Compare methods with a partner and check each answer.



Independent Practice

1. Find $\frac{5}{6}$ of 72.
2. Find $\frac{3}{4}$ of 92 minutes.
3. Find $\frac{7}{12}$ of 1,008.
4. Maya reads $\frac{2}{5}$ of a 150-page book. How many pages remain?

Show the calculation, label the units, and include a reasonableness check.



Review

Denominator $\rightarrow$ number of equal groups

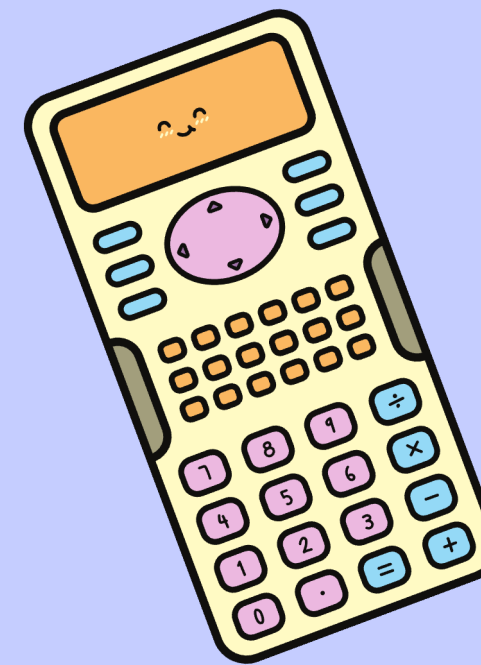
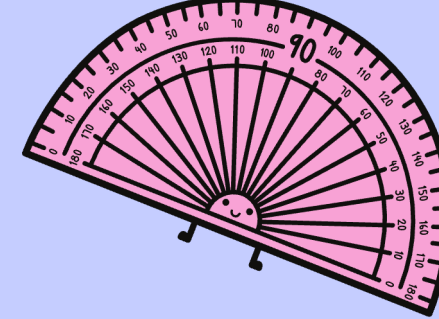
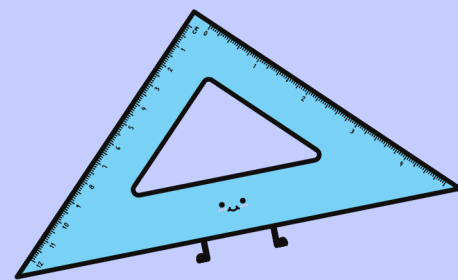
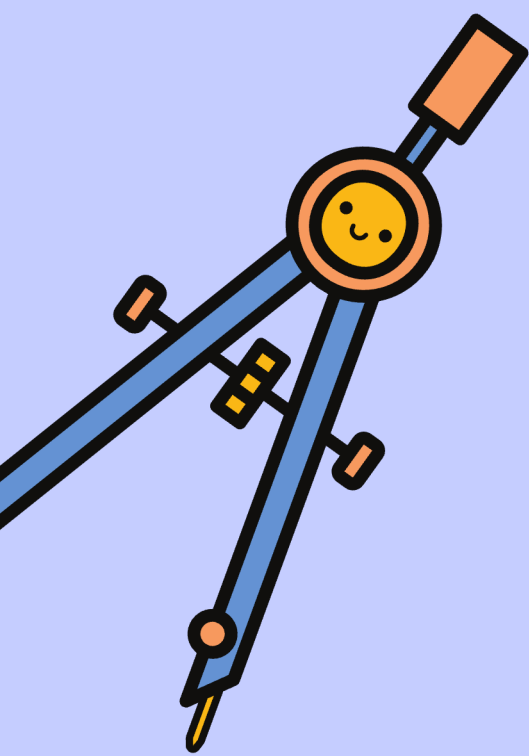
Numerator $\rightarrow$ number of groups selected

of $\rightarrow$ multiply

Use: $\text{whole} \div \text{denominator} \times \text{numerator}$

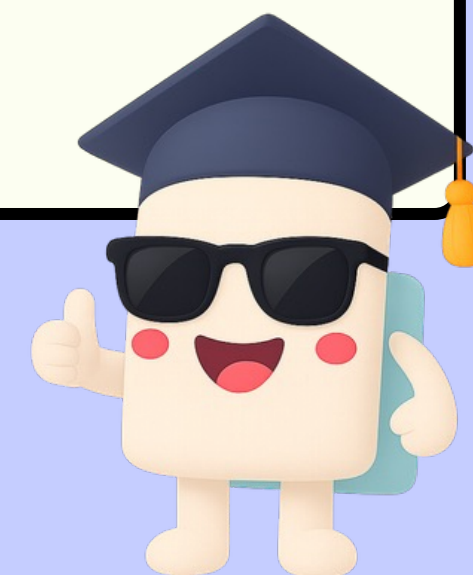
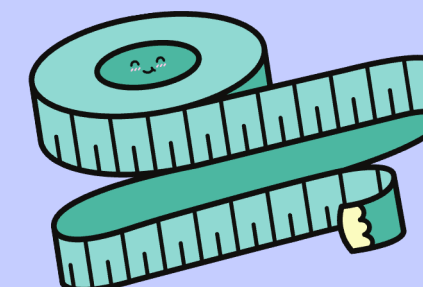
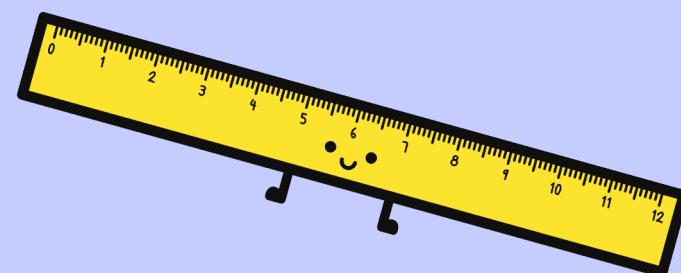
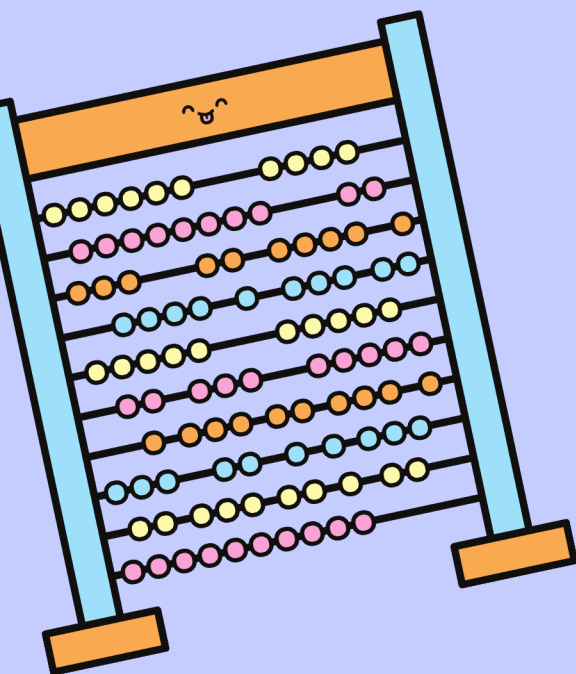
Check that your answer has the correct size, units and meaning.

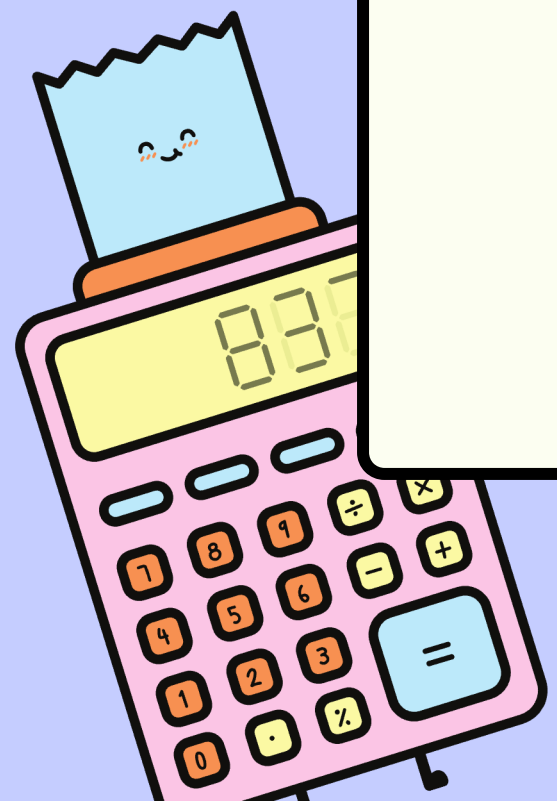
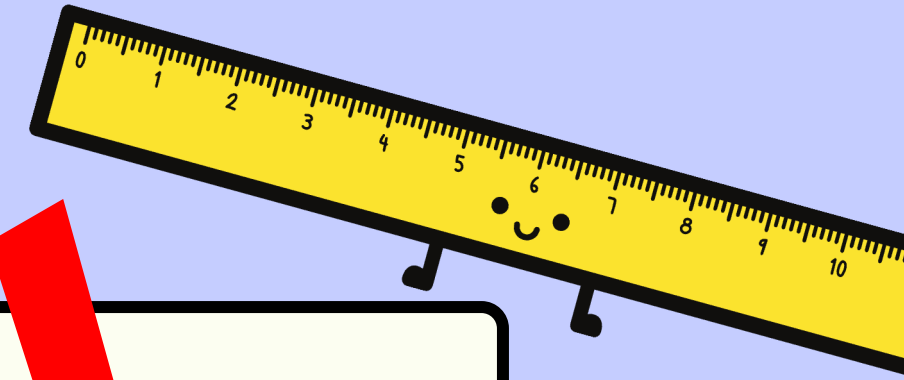
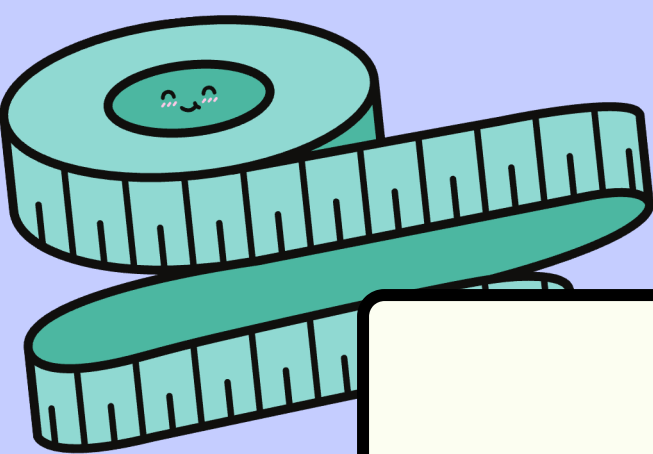




You are a fraction finder!

PREVIEW





PREVIEW

Fractions of a Whole Numbers Quiz



Question 1

True or false?

$\frac{1}{3}$ of 24 is 8.

PREVIEW



Answer 1

True.

$$24 \div 3 = 8.$$

PREVIEW



Question 2

What is $\frac{3}{5}$ of 40?

- A. 15
- B. 20
- C. 24
- D. 30



Answer 2

C. 24

$$40 \div 5 \times 3 = 24.$$

PREVIEW



Question 3

Find $\frac{5}{8}$ of 64.

Show your calculation

PREVIEW



Answer 3

40

$$64 \div 8 \times 5 = 40.$$

PREVIEW



Question 4

Which expression finds $\frac{4}{7}$ of 56?

A. $56 \div 4 \times 7$

B. $56 \div 7 \times 4$

C. $56 \times 7 \div 4$

D. $56 - 7 \div 4$



Answer 4

B. $56 \div 7 \times 4$

Divide by 7, then multiply by 4.

PREVIEW



Question 5

True or false?

To find $\frac{2}{3}$ of 45, calculate $45 \div 2 \times 3$.

PREVIEW



Answer 5

False.

Calculate $45 \div 3 \times 2 = 30$.

PREVIEW



Question 6

What is $\frac{3}{4}$ of \$68?

Show your calculation

PREVIEW



Answer 6

\$51

$$68 \div 4 \times 3 = 51.$$

PREVIEW



Question 7

What is $\frac{5}{6}$ of 90 minutes?

- A. 65 minutes
- B. 70 minutes
- C. 75 minutes
- D. 80 minutes



Answer 7

C. 75 minutes

$$90 \div 6 \times 5 = 75.$$

PREVIEW



Question 8

Theo has 84 cards and gives $\frac{3}{7}$ away.

How many cards remain?

Show both steps.



Answer 8

48 cards remain.

$$\frac{3}{7} \text{ of } 84 = 36$$

$$84 - 36 = 48.$$

PREVIEW



Question 9

What is $\frac{7}{12}$ of 1,008?

A. 504

B. 560

C. 588

D. 672



Answer 9

C. 588

$$1,008 \div 12 \times 7 = 588.$$

PREVIEW



Question 10

True or false?

$\frac{5}{8}$ of 96 is 60.

PREVIEW



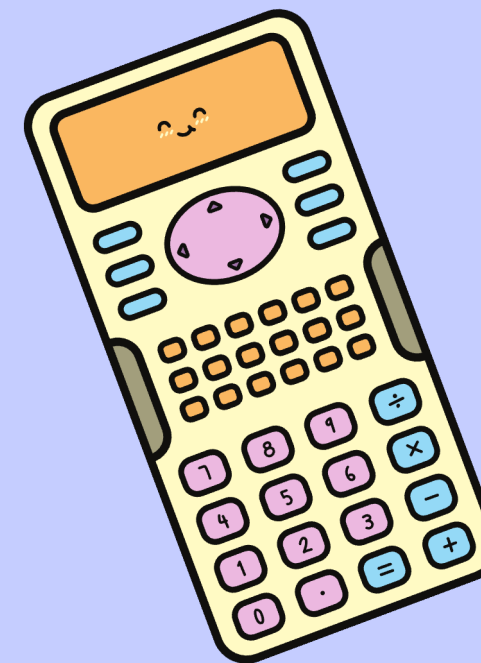
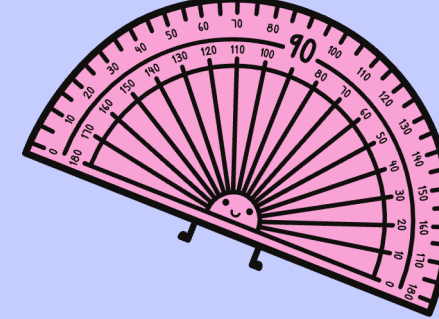
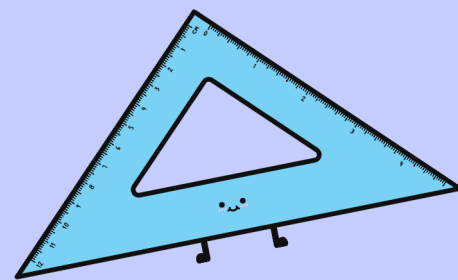
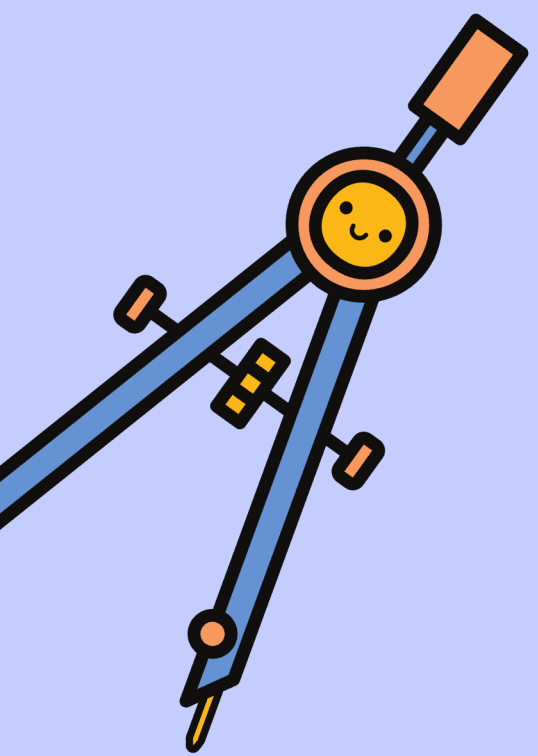
Answer 10

True.

$$96 \div 8 \times 5 = 60.$$

PREVIEW





Well done, fraction finder!

PREVIEW

