

Changing Fractions to Decimals on a Calculator

You can change fractions to decimals on a calculator. Do you remember how to change a fraction to a decimal? Divide the numerator by the denominator.

For $\frac{1}{4}$, press

The calculator shows $\frac{1}{4}$ as .

The fraction $\frac{1}{4}$ has an exact decimal equivalent, 0.25.

For $\frac{2}{3}$, press

Depending on your calculator, it may show or .

The fraction $\frac{2}{3}$ has no exact decimal equivalent. Your calculator may show the first part of the repeating decimal that is equal to $\frac{2}{3}$, or it may round the last digit on the display. Not all calculators show the result the same way.

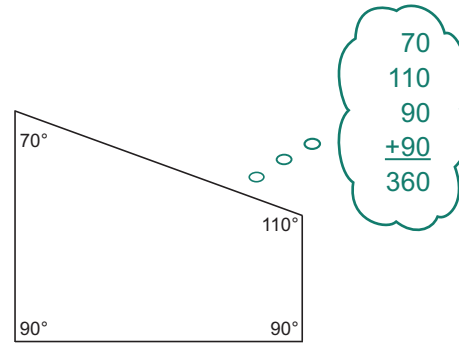
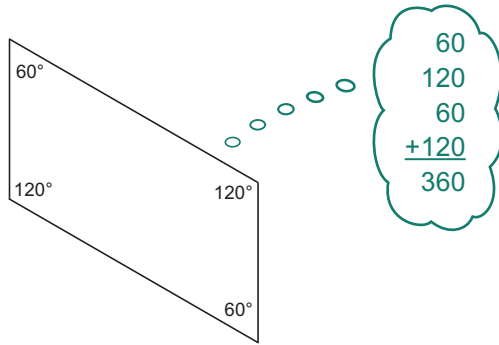


Look at the first example. Use it as a pattern to fill all the blanks in the following exercises. Use your calculator to find the answers.

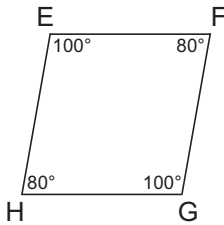
- For $\frac{1}{2}$, press . The calculator shows $\frac{1}{2}$ as .
- For $\frac{3}{8}$, press _____. The calculator shows $\frac{3}{8}$ as _____.
- For $\frac{7}{2}$, press _____. The calculator shows $\frac{7}{2}$ as _____.
- For $\frac{7}{10}$, press _____. The calculator shows $\frac{7}{10}$ as _____.
- For $\frac{2}{5}$, press _____. The calculator shows $\frac{2}{5}$ as _____.
- For $\frac{9}{4}$, press _____. The calculator shows $\frac{9}{4}$ as _____.
- For $\frac{17}{3}$, press _____. The calculator shows $\frac{17}{3}$ as _____.
- For $\frac{2}{9}$, press _____. The calculator shows $\frac{2}{9}$ as _____.
- For $\frac{31}{8}$, press _____. The calculator shows $\frac{31}{8}$ as _____.

Angles of a Quadrilateral

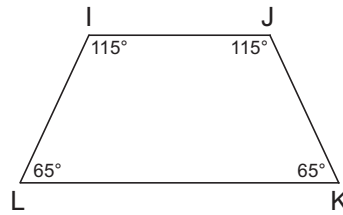
The sum of the 4 angle measurements of a quadrilateral is always 360° . This is easy to remember for squares and rectangles, because $4 \text{ angles} \times 90^\circ = 360^\circ$. But it is also true of these quadrilaterals:



Add the angle measurements of EFGH and IJKL.



10. a. Sum: _____°



b. Sum: _____°



Find the sales tax and total bill for each amount.

11. purchase \$48.00
a. 6% sales tax \$_____
b. total bill \$_____

12. purchase \$86.50
a. 8% sales tax \$_____
b. total bill \$_____

Convert the metric units.

kilo	hecto	deca		deci	centi	milli
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13. a. 760 mg = _____ g b. 28 mm = _____ cm c. 840 g = _____ kg

Lesson 7

 Mastery Drill

- 14.** 1 kilometer = _____ meters
- 15.** The fraction we use for π is _____ .
- 16.** **a.** 1 pint = _____ cups **b.** 1 quart = _____ pints
- 17.** An obtuse angle measures between _____° and _____°.
- 18.** The four angles formed by a pair of intersecting lines measure a total of _____°.
- 19.** The four angles of a quadrilateral measure a total of _____°.

Find each number.

- 20. a.** 60% of 50 = _____ **b.** 70% of 50 = _____

- 21.** Sara's school is giving a Thanksgiving program at the Oak Lane Senior Citizen's Home. The 31 students, 3 teachers, and 5 parents will travel to the home in vans. Each van has seatbelts for 12 people. How many vans will be needed?

- 22.** The ancient Romans built about 50,000 miles of paved roads to connect every part of the Empire to the city of Rome. The United States has about 43,000 miles of interstate highways connecting most of the nation's largest cities to each other. What is the difference in miles between ancient Roman paved roads and modern United States interstate highways?

Divide to show each fraction as a decimal to the nearest hundredth. Then write the percent.

23. a. $\frac{1}{18} \approx$ _____ = _____

b. $\frac{12}{49} \approx$ _____ = _____

Divide. Write remainders with *R*.

24. a. $843 \overline{)6,419}$

b. $286 \overline{)1,418}$

c. $490 \overline{)2,470}$

Use the circle graph on page 21 to answer the questions.

25. How many dollars did Ashley spend on Christmas cards and books? _____

26. What percent of the money did Ashley spend on Christmas cards and books? _____

27. Which purchase cost twice as much as Ashley's church offering? _____

Answer these questions.

28. If 13% of the population are farmers, what percent are not farmers? _____

29. If we take off 28% of the price, what percent is left to pay? _____

Substitute 9 for *s*. Simplify the expressions.

30. a. $11 \cdot 8 + s \div 3$

b. $18 \div s + 2(s) - 6$

Lesson 7

— $\begin{matrix} + \\ - \\ \times \\ \div \end{matrix}$ Skill Builders —

Round to the nearest hundredth.

31. a. $\begin{array}{r} 670 \\ \times 808 \\ \hline \end{array}$

b. $\begin{array}{r} 0.25 \\ \times 1.06 \\ \hline \end{array}$

c. $80 \overline{)287.38}$

32. a. $\begin{array}{r} 9,956 \\ - 9,175 \\ \hline \end{array}$

b. $1\frac{5}{9} \times 2\frac{2}{5} \times \frac{5}{14} = \underline{\hspace{2cm}}$

c. $5\frac{3}{5} \div \frac{14}{15} = \underline{\hspace{2cm}}$



Use your calculator to change the fractions to decimals.

33. The calculator shows $\frac{9}{16}$ as $\underline{\hspace{2cm}}$.

34. The calculator shows $\frac{26}{5}$ as $\underline{\hspace{2cm}}$.

Electronic navigation is based on radio signals. The satellites you see blinking in the night sky are controlled in this way.

Follow the directions.

35. Write the sum of the angle measurements of ABCD.

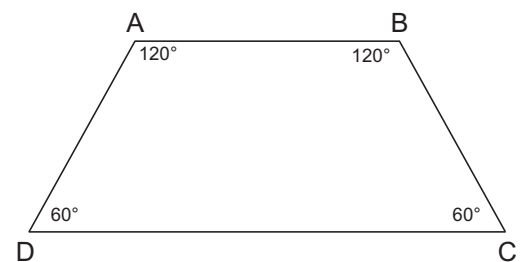
$\underline{\hspace{2cm}}$

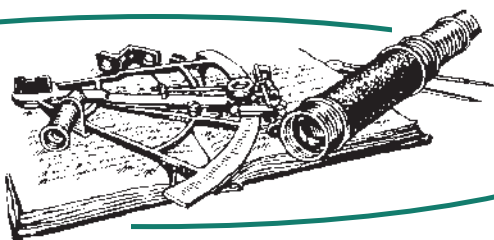
36. Classify quadrilateral ABCD as a *trapezoid*, *parallelogram*, *rhombus*, *rectangle*, or *square*.

$\underline{\hspace{2cm}}$

37. Give a reason for your answer in number 36.

$\underline{\hspace{4cm}}$





Converting Common Metric Units of Capacity

The **liter** is the basic unit of capacity in the metric system. The metric units of capacity that we use most commonly are the **liter** and the **milliliter**.

Study the following chart. The units in the shaded rows are those you will work with in Math 600.

UNIT	RELATION TO GRAM
kiloliter (kL)	1,000 liters
hectoliter (hL)	100 liters
decaliter (dkL)	10 liters
liter (L)	1 liter
deciliter (dL)	0.1 liter ($\frac{1}{10}$ liter)
centiliter (cL)	0.01 liter ($\frac{1}{100}$ liter)
milliliter (mL)	0.001 liter ($\frac{1}{1,000}$ liter)

When we change between units in the metric system, we are actually multiplying or dividing by multiples of 10.

When changing from larger to smaller units, multiply by moving the decimal point to the right.

$$45 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$$

The chart shows that we move the decimal point three places to the right.

$$45 \text{ L} = 45,000 \text{ mL}$$

Remember
 $1 \text{ L} = 1,000 \text{ mL}$
 $1 \text{ mL} = 0.001 \text{ L}$

When changing from smaller to larger units, divide by moving the decimal point to the left.

$$350 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$$

The chart shows that we move the decimal point three places to the left.

$$350 \text{ mL} = 0.35 \text{ L}$$

kilo	hecto	deca		deci	centi	milli
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Lesson 8

Convert the metric units. Use the metric chart on page 29 if you need it.

1. a. $6.39 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$ b. $7,875 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$ c. $0.003 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$
2. a. $126 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$ b. $2,197 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$ c. $0.267 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$



We Remember



Use your calculator to change the fraction to a decimal.

3. The calculator shows $\frac{4}{3}$ as $\underline{\hspace{2cm}}$.

Follow the directions.

4. Write the sum of the angle measurements of EFGH.

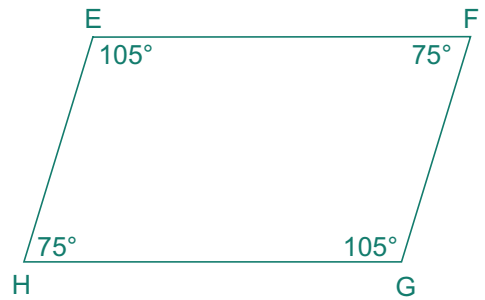
$\underline{\hspace{2cm}}$

5. Classify quadrilateral EFGH as a *trapezoid*, *parallelogram*, *rhombus*, *rectangle*, or *square*.

$\underline{\hspace{2cm}}$

6. Give a reason for your answer in number 5.

$\underline{\hspace{2cm}}$



7. Sara wants to triple a recipe for brownies. The recipe calls for $1\frac{1}{3}$ cups of flour. There are exactly 4 cups of flour left in the canister. Will it be enough?

$\underline{\hspace{2cm}}$



8. There are $1\frac{1}{2}$ dozen eggs in the refrigerator. The recipe for one angel food cake calls for 7 eggs. Can Sara make three angel food cakes?

$\underline{\hspace{2cm}}$

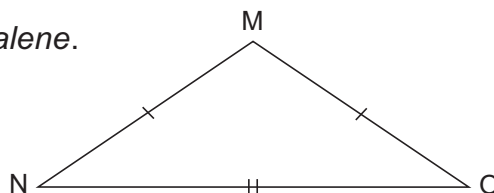
— *Mastery Drill* —

9. a. 1 cubic centimeter = _____ milliliter b. 1 quart = _____ cups
10. a. 1 millennium = _____ years b. 1 gallon = _____ quarts
11. a. 1 century = _____ years b. 1 decade = _____ years
12. a. *Deca* means _____. b. *Deci* means _____. c. *Milli* means _____

Follow the directions.

13. Classify triangle MNO as *equilateral*, *isosceles*, or *scalene*.

14. Give a reason for your answer in number 13.



— *Skill Builders* —

Write the
remainder with R.

Write the repeating
decimal with a bar.



15. a. $7 \overline{)165,729}$

b. $90 \overline{)673}$

c. $\frac{2}{3} \div 4\frac{4}{9} = \underline{\hspace{2cm}}$

16. a. $4\frac{3}{7} - 2\frac{5}{14}$

b. $7,281 - 6,186$

c. $3\frac{5}{12} + 8\frac{3}{4} + 5\frac{5}{8}$

Lesson 8

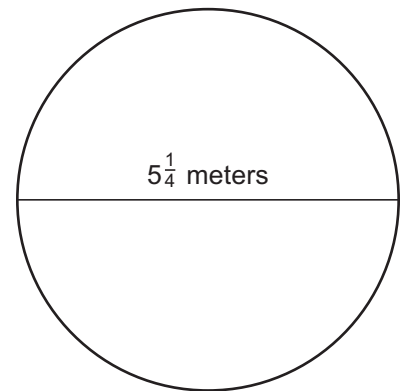
— ?... Mental Math —

17. $\sqrt{64} \times 300 \div 6 + 600 - 750 \div 5 = \underline{\hspace{2cm}}$

18. a. $\frac{5}{12}$ of 24 is $\underline{\hspace{2cm}}$ b. $\frac{2}{5}$ of 40 is $\underline{\hspace{2cm}}$ c. $\frac{1}{6}$ of 42 is $\underline{\hspace{2cm}}$ d. $\frac{3}{4}$ of 24 is $\underline{\hspace{2cm}}$

Write the formula and find the circumference. Use $\frac{22}{7}$ for pi.

19. $\underline{\hspace{4cm}}$



Change each percent to a fraction showing hundredths. Then reduce to simplest form.

20. a. $55\% = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ b. $72\% = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Find the sales tax and total bill for each amount.

21. purchase \$16.20
a. 5% sales tax \$ $\underline{\hspace{2cm}}$
b. total bill \$ $\underline{\hspace{2cm}}$

22. purchase \$8.00
a. 7% sales tax \$ $\underline{\hspace{2cm}}$
b. total bill \$ $\underline{\hspace{2cm}}$

Use factor trees to find the prime factors.

23. a. $49 = \underline{\hspace{2cm}}$ b. $21 = \underline{\hspace{2cm}}$ c. $8 = \underline{\hspace{2cm}}$

Convert the metric units.

kilo	hecto	deca		deci	centi	milli
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24. a. $1.52 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$ b. $1,571 \text{ m} = \underline{\hspace{2cm}} \text{ km}$ c. $333 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$