

1

Write **0.82** as a fraction and a percent.

Percent means “out of 100”.

$$\frac{82}{100} = \frac{82 \div 2}{100 \div 2} = \frac{41}{50}$$

$$\boxed{\frac{41}{50} \text{ and } 82\%}$$

2

$$\frac{4}{6} + \frac{1}{6} + \frac{5}{12}$$

The common denominator is 12.

$$\frac{4 \times 2}{6 \times 2} = \frac{8}{12} \quad \frac{1 \times 2}{6 \times 2} = \frac{2}{12} \quad \frac{5}{12} = \frac{5}{12}$$

$$\frac{8}{12} + \frac{2}{12} + \frac{5}{12} = \frac{15}{12}$$

$$15 \div 12 = 1 \frac{3}{12} = 1 \frac{1}{4}$$

$$\boxed{1 \frac{1}{4}}$$

3

Simplify.

$$3a^2 + 2b \div 3$$

$$a=4 \quad b=3$$

PEMDAS

$$3(4)^2 + 2(3) \div 3$$

$$3(16) + 2(3) \div 3$$

$$48 + 6 \div 3$$

$$48 + 2$$

$$\boxed{50}$$

4

Write the prime factorization of **630**.

$$630 \div 7 = 90 \quad \boxed{7}$$

$$90 \div 5 = 18 \quad \boxed{5}$$

$$18 \div 3 = 6 \quad \boxed{3}$$

$$6 \div 3 = 2 \quad \boxed{3}$$

$$2 \div 2 = 1 \quad \boxed{2}$$

$$\boxed{7 \times 5 \times 3^2 \times 2}$$

5

$$\begin{array}{r} \$16.75 + f = \$20 \\ -16.75 \quad \quad -16.75 \\ \hline \end{array}$$

$$f = 3.25$$

$$\boxed{f = \$3.25}$$

6

Find 5% of 560

Turn the percentage into a decimal.

$$5\% = .05$$

Multiply the decimal by the whole number.

$$\begin{array}{r} 560 \\ .05 \\ \hline 2800 \end{array}$$

2 decimal places.

28

7

Find the GCF of 16 and 36.

Factors of 16 are 1, 2, 4, 8, 16.

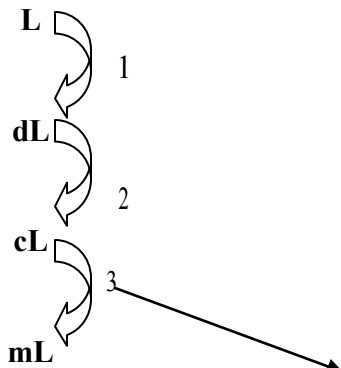
Factors of 36 are 1, 2, 3, 4, 9, 12, 18, 36.

The largest factor they share is 4.

4

8

$$2.8 \text{ L} = \text{ ___ mL}$$



The unit is getting smaller so you multiply by 10^3

$$\begin{array}{r} 2.800 \\ 2800 \end{array}$$

2800

9

7 divided by $1\frac{1}{4}$

Rewrite the problem using symbols.

$$7 \div 1\frac{1}{4}$$

Change the whole number to a fraction and the mixed number to an improper fraction.

$$\frac{7}{1} \div \frac{5}{4}$$

“Invert and multiply”

$$\frac{7}{1} \times \frac{4}{5} = \frac{28}{5}$$

Change the improper fraction to a mixed number.

$$28 \div 5 = 5\frac{3}{5}$$

$5\frac{3}{5}$

10

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

The common denominator is 12.

$$\frac{3 \times 3}{4 \times 3} = \frac{9}{12} \quad \frac{1}{12} = \frac{1}{12}$$

Simplify.
$$\frac{1}{12} - \frac{1}{12}$$

$$\frac{9}{12} - \frac{1}{12} = \frac{8}{12}$$

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

$$\frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

$$\frac{2}{3}$$

11

Write 40 % as a fraction and a decimal.

Percent means "out of 100".

$$\frac{40}{100} = \frac{40 \div 10}{100 \div 10} = \frac{4 \div 2}{10 \div 2} = \frac{2}{5} \quad .40 = .4$$

$$\frac{2}{5} \text{ and } .4$$

12

$$8\frac{1}{2} - 2\frac{2}{3}$$

Convert both fractions to improper fractions.

$2 \times 8 = 16$
 $16 + 1 = 17$
 $8\frac{1}{2} = \frac{17}{2}$

$2 \times 3 = 6$
 $6 + 2 = 8$
 $2\frac{2}{3} = \frac{8}{3}$

Find a common denominator (6).

$$\frac{17}{2} = \frac{51}{6} \quad \frac{8}{3} = \frac{16}{6}$$

$$\frac{51}{6} - \frac{16}{6} = \frac{35}{6}$$

Convert back to a mixed fraction.

$$35 \div 6 = 5\frac{5}{6}$$

$$5\frac{5}{6}$$

13

Find the LCM of 14 and 18.

The first nine multiples of 14—
14, 28, 42, 56, 70, 84, 98, 112, 126

The first nine multiples of 18—
18, 36, 54, 72, 90, 108, 126, 144, 162

The smallest multiple they share is 126.

$$126$$

14

$$\frac{2}{3} \times \frac{3}{4}$$

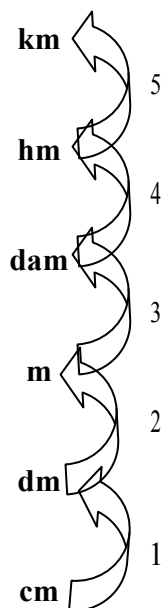
Multiply the numerators and multiply the denominators.

$$\frac{2 \bullet 3}{3 \bullet 4} = \frac{6}{12} = \frac{1}{2}$$

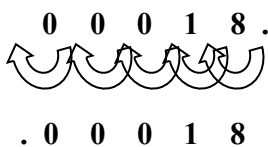
$$\frac{1}{2}$$

15

$$18 \text{ cm} = \underline{\hspace{1cm}} \text{ km}$$



The unit is getting smaller so you divide by 10^5



.00018

16

$$\frac{150}{5} = \frac{5x}{5}$$

$$30 = x$$

$$x = 30$$

30

17

$$\frac{x}{4} = 2$$

$$4 \cdot \frac{x}{4} = 2 \cdot 4$$

$$x = 8$$

8

18

Find the surface area and volume of a cube with an edge of 3 cm.

$$S = 6s^2$$

$$V = s^3$$

$$S = 6(3)^2$$

$$V = 3^3$$

$$S = 6(9)$$

$$V = (3 \times 3 \times 3)^3$$

$S = 54 \text{ cm}^2$

$V = 27 \text{ cm}^3$

19

$$\frac{8}{12} = \frac{6}{x}$$

Cross multiply (you can reduce the fraction first, if possible)

$$8x = 72$$

$$8x \div 8 = 72 \div 8$$

$x = 9$

20

5 is what percent of 200?

$$\frac{\text{part}}{\text{whole}} = \frac{\%}{100}$$

$$\frac{5}{200} = \frac{x}{100}$$

$$200x = 5 \times 100$$

$$\frac{200x}{200} = \frac{500}{200}$$

$$x = 2.5$$

2.5%

