

Write the ratio as a ratio of whole numbers using fractional notation. Write the fraction in simplest form.

1) 9.9 to 10 1) \_\_\_\_\_

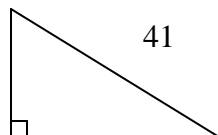
2)  $3\frac{1}{4}$  to  $1\frac{5}{7}$  2) \_\_\_\_\_

Solve the proportion for the given variable.

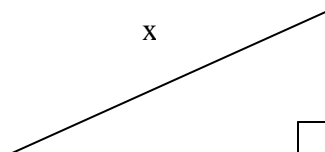
3)  $\frac{x}{14} = \frac{49}{35}$  3) \_\_\_\_\_

Given that the pair of triangles is similar, find the length of the side labeled x.

4) 4) \_\_\_\_\_



40



80

Write as a unit rate.

5) 360 miles in 6 hours 5) \_\_\_\_\_

6) 540 miles on 18 gallons of gas 6) \_\_\_\_\_

Find the unit price.

7) \$49.50 for 5 video tapes 7) \_\_\_\_\_

8) \$5.10 for 6 oranges 8) \_\_\_\_\_

Find the unit rate.

9) In a region, the total number of students enrolled in public schools in a recent year was 488,704. At the same time, there were 24,491 public school teachers. Write a unit rate in students per teacher. Round to the nearest whole student. 9) \_\_\_\_\_

Find the unit price.

10) Find the better buy (lower cost per ounce) by finding each unit price rounded to three decimal places if necessary. Assume that different sizes of the same brand are being compared. 10) \_\_\_\_\_

- Popcorn
- \$1.20 for 20 ounces
- \$1.17 for 18 ounces

Fill in the table to calculate miles per gallon.

11) 11) \_\_\_\_\_

| Beginning Odometer Reading | Ending Odometer Reading | Miles Driven | Gallons of Gas Used | Miles per Gallon (round to the nearest tenth) |
|----------------------------|-------------------------|--------------|---------------------|---|
| 53,079                     | 53,676                  |              | 15.9                |   |

Solve the proportion for the given variable.

$$12) \frac{x}{\frac{4}{17}} = \frac{2\frac{1}{8}}{1\frac{1}{3}}$$

12) \_\_\_\_\_

Write the proportion and solve. Show all work.

13) The ratio of a quarterback's completed passes to attempted passes is 3 to 10. If he attempted 50 passes, find how many passes he completed. Round to the nearest whole number if necessary.

13) \_\_\_\_\_

14) It takes Sarah 18 minutes to type and spell check 10 pages of a manuscript. Find how long it takes her to type and spell check 45 pages. Round answers to the nearest whole number if necessary.

14) \_\_\_\_\_

15) A fire fighter needs to estimate the height of a burning building. She estimates the length of her shadow to be  $8\frac{1}{2}$  feet long and the length of the building's shadow to be 51 feet long. Find the height of the building if the fire fighter is  $5\frac{2}{3}$  feet tall.

15) \_\_\_\_\_

16) If a tree 27.5 feet tall casts a shadow that is 11 feet long, find the height of a tree casting a shadow that is 13 feet long. Round to the nearest tenth if necessary.

16) \_\_\_\_\_

Write the percent as a decimal.

17) 3%

17) \_\_\_\_\_

18)  $90\frac{2}{5}\%$

18) \_\_\_\_\_

Write the decimal as a percent.

19) 2.1

19) \_\_\_\_\_

20) 0.87

20) \_\_\_\_\_

21) 0.001

21) \_\_\_\_\_

Write the percent as a fraction or mixed number in simplest form.

22) 45%

22) \_\_\_\_\_

23) 8.5%

23) \_\_\_\_\_

24)  $7\frac{3}{4}\%$

24) \_\_\_\_\_

Write the fraction or mixed number as a percent.

25)  $\frac{3}{16}$

25) \_\_\_\_\_

26)  $\frac{5}{12}$

Round to the nearest hundredth percent.

26) \_\_\_\_\_

**Solve.**

27) The Powell family paid 21% of the purchase price of a \$188,000 home as a down payment. Determine the amount of the down payment.

27) \_\_\_\_\_

28) What is the sales tax on a scanner priced at \$160 if the sales tax rate is 7.6%?

28) \_\_\_\_\_

29) Find the simple interest when: Principal = \$630, Rate = 7.5%, Time = 9 years.

29) \_\_\_\_\_

**Translate to an equation or a proportion and solve. Show your work.**

30) 75% of 12 is what number?

30) \_\_\_\_\_

31) What number is 48% of 27?

31) \_\_\_\_\_

32) 20% of what number is 51?

32) \_\_\_\_\_

33) 0.26 is 52% of what number?

33) \_\_\_\_\_

34) 105 is what percent of 70?

34) \_\_\_\_\_

35) 144.4 is  $9\frac{1}{2}\%$  of what number?

35) \_\_\_\_\_

36) What percent of 140 is 532?

36) \_\_\_\_\_

37) One day 70 nurses were sick with the flu. If this were 28% of the total number of nurses, how many nurses were there altogether?

37) \_\_\_\_\_

38) The sales tax on the purchase of a van is \$3130.76. If the tax rate is 9.2%, find the purchase price of the van.

38) \_\_\_\_\_

39) Last year, Lee bought a share of stock for \$13.76. She was paid a dividend of \$10.32 Determine what percent of the stock price is the dividend.

39) \_\_\_\_\_

40) A sales representative is paid a commission rate of 4.6%. Find her commission if she sold \$178,510 worth of goods last month.

40) \_\_\_\_\_

41) How much commission will an agent make on the sale of a \$199,600 house if she receives 12% of the selling price?

41) \_\_\_\_\_

42) Find the amount of discount when the original price is \$65.00 and the discount rate is 35%.

42) \_\_\_\_\_

43) Find the sale price when the original price is \$76.00 and the discount rate is 41%.

43) \_\_\_\_\_

- |     |   |     |                             |
|-----|---|-----|-----------------------------|
| 1)  | $\frac{99}{100}$                        | 25) | $18\frac{3}{4}\%$ or 18.75% |
| 2)  | $\frac{91}{48}$                         | 26) | 41.67%                      |
| 3)  | x = 19.6                                | 27) | \$39,480                    |
| 4)  | 82                                      | 28) | \$12.16                     |
| 5)  | 60 mi/hr                                | 29) | \$425.25                    |
| 6)  | 30 mi/gal                               | 30) | 9                           |
| 7)  | \$9.90/video tape                       | 31) | 12.96                       |
| 8)  | \$0.85/orange                           | 32) | 255                         |
| 9)  | 20 students/teacher                     | 33) | 0.5                         |
| 10) | \$1.20 for 20 oz                        | 34) | 150%                        |
| 11) | 597 miles driven; 37.5 miles per gallon | 35) | 1520                        |
| 12) | $x = \frac{3}{8}$                       | 36) | 380%                        |
| 13) | 15 passes completed                     | 37) | 250 nurses                  |
| 14) | 81 min                                  | 38) | \$34,030                    |
| 15) | 34 ft                                   | 39) | 75%                         |
| 16) | 32.5 ft                                 | 40) | \$8211.46                   |
| 17) | 0.03                                    | 41) | \$23,952                    |
| 18) | 0.904                                   | 42) | \$22.75                     |
| 19) | 210%                                    | 43) | \$44.84                     |
| 20) | 87%                                     |     |                             |
| 21) | 0.1%                                    |     |                             |
| 22) | $\frac{9}{20}$                          |     |                             |
| 23) | $\frac{17}{200}$                        |     |                             |
| 24) | $\frac{31}{400}$                        |     |                             |