

1. If a restaurant bill of \$63.85 is shared by 5 people, how much should each person pay?

$$\begin{array}{r}
 12.77 \\
 5 \overline{) 63.85} \\
 \underline{-5} \\
 13 \\
 \underline{10} \\
 38 \\
 \underline{35} \\
 35 \\
 \underline{35} \\
 0
 \end{array}$$

dunch

→ \$12.77

2. Simplify: $0.1(4 - 2.8) + (0.6)^2$

$$\begin{aligned}
 & 0.1(1.2) + 0.36 \\
 & 0.12 + 0.36 \\
 & = 0.48
 \end{aligned}$$

$$\begin{array}{r}
 .6 \\
 .6 \\
 \hline
 .36 \\
 \hline
 .12 \\
 .36 \\
 \hline
 .48
 \end{array}$$

3. Convert $17\frac{2}{3}$ to a decimal, rounded to the nearest hundredth.

$$\begin{array}{r}
 17.66\bar{6} \\
 17.67
 \end{array}$$

$$\frac{2}{3} \rightarrow 3 \overline{) 20} \begin{array}{r} 0.6666 \\ \underline{18} \\ 20 \end{array}$$

4. Siri's homework scores are 10, 8.5, 0, 4, and 8.5.
a) What is the median of these scores?

$$0 \quad 4 \quad (8.5) \quad 8.5 \quad 10$$

8.5

$$\begin{array}{r}
 10 \\
 8.5 \\
 0 \\
 4 \\
 8.5 \\
 \hline
 31.0
 \end{array}$$

b) What is the average (mean) of these scores?

$$\begin{array}{r}
 7.75 \\
 4 \overline{) 31.0} \\
 \underline{28} \\
 30 \\
 \underline{28} \\
 20
 \end{array}$$

→ 7.75 or $7\frac{3}{4}$

$$3 \overline{) 11.0}$$

5. Solve: $0.8x + 3.6 = 6$

$$0.8x + 3.6 = 6.0$$

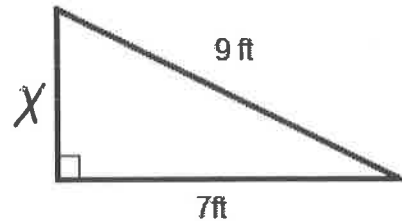
$$\quad \quad -3.6 \quad -3.6$$

$$\frac{0.8x}{0.8} = \frac{2.4}{0.8}$$

$$x = \frac{2.4}{0.8} = \frac{24}{8} = 3$$

6. Using the triangle below:

a) Find the length of the unknown side, leaving your answer as a radical.



$$x^2 + 7^2 = 9^2$$

$$x^2 + 49 = 81$$

$$\quad \quad -49 \quad -49$$

$$x^2 = 32 \quad ; \quad x = \sqrt{32}$$

b) What 2 whole numbers does x fall between?

~~$25 \leq 32 \leq 36$~~

5 and 6

7. Find the area of a 20-inch (diameter) round pizza.

$$A = \pi r^2$$

$$d = 20 \text{ in}$$

$$r = 10 \text{ in}$$

$$= 3.14 (10 \text{ in})^2 = 3.14 (100) \text{ in}^2$$

$$= 314 \text{ in}^2$$

8. Find the circumference of a 20-inch (diameter) tire.

$$C = \pi d = 3.14 (20 \text{ in})$$

$$= 62.8 \text{ in}$$

$$\begin{array}{r} 3.14 \\ \times 20 \\ \hline 6280 \end{array}$$

9. Find the ratio of 8 inches to 2 feet using the same units and writing in lowest terms.

$$\frac{8 \text{ in}}{2 \text{ ft}} = \frac{8 \text{ in}}{2(12 \text{ in})} = \frac{8 \cancel{\text{ in}}}{24 \cancel{\text{ in}}} = \frac{1}{3}$$

10. Meg drives 520 miles in 8 hours. Write this as a unit rate.

$$\frac{520 \text{ mi}}{8 \text{ hr}} = 65 \text{ mi/hr}$$

$$\begin{array}{r} 65 \\ 8 \overline{)520} \\ \underline{48} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

11. Is the proportion $\frac{3\frac{1}{3}}{10} = \frac{1}{3}$ true? Show work to receive full credit.

$$\left(3\frac{1}{3}\right) 3 \stackrel{?}{=} 10.1$$

$$\frac{10}{3} \cdot 3 = 10 \text{ yes}$$

$$3\frac{1}{3} = \frac{9+1}{3} = \frac{10}{3}$$

true proportion

12. Solve the proportion: $\frac{x}{90} = \frac{9}{10}$

$$1 \cdot x = 9 \cdot 9 = 81$$

$$x = 81$$

13. a) Convert 11.7% to decimal format (without a percent symbol).

$$\frac{11.7}{100} = 0.117$$

- b) Convert 11.7% to fraction format (without decimals or a percent symbol).

$$\frac{11.7}{100} = \frac{117}{1000}$$

14. Find the volume of a box whose dimensions are 30 cm X 8 cm X 20 cm.

$$\begin{aligned} V &= (30 \text{ cm})(8 \text{ cm})(20 \text{ cm}) \\ &= (30)(8)(20) \text{ cm}^3 \\ &= (240)(20) \text{ cm}^3 = \\ &= 4800 \text{ cm}^3 \end{aligned}$$

15. A recipe uses 10 eggs for 25 servings. How many eggs are needed for 60 servings?

$$\begin{array}{l} \text{eggs} \\ \text{servings} \end{array} \frac{10}{25} = \frac{X}{60}$$

$$\frac{2}{5} = \frac{X}{60} \quad \frac{2}{1} = \frac{X}{12}$$

$$\begin{aligned} 1 \cdot X &= 2(12) \\ X &= 24 \text{ eggs} \end{aligned}$$

16. 20% of what number is 60?

$$0.2(X) = 60$$

$$\frac{.2X}{.2} = \frac{60}{.2}$$

$$X = \frac{600}{2} = 300$$

17. What percent is 4 out of 9?

$$\begin{aligned} X\% &= \frac{4}{9} \\ &= 44.\bar{4}\% \end{aligned}$$

$$\begin{array}{r} 0.44\text{---} \\ 9 \overline{)44.0} \\ \underline{36} \\ 40 \\ \underline{36} \\ 4 \end{array}$$

18. On a test of 60 questions, Ray missed 9 problems. What percent were correct?

$$\text{percent correct} = \frac{\text{amount correct}}{\text{base}}$$

$$\begin{array}{r} 60 \\ -9 \\ \hline 51 \text{ correct} \end{array}$$

$$P = \frac{51}{60} = .85 = 85\%$$

$$\begin{array}{r} 0.85 \\ 60 \overline{)51.0} \\ \underline{48.0} \\ 3.00 \\ \underline{3.00} \\ 0 \end{array}$$

19. a) How much tax is charged on an \$80 pair of shoes, if the sales tax rate is 7.5%?

$$7.5\% = 0.075$$

$$A = P \cdot B$$

$$\text{tax} = (.075)(80)$$

$$A = \$6$$

$$\begin{array}{r} 4 \\ .075 \\ 80 \\ \hline 6.00 \end{array}$$

- b) What is the final price, including tax?

$$\text{Final: } \$80 + \$6 = \$86$$

20. A \$500 TV is discounted to \$350. What is the percent of the discount?



final price

$$\begin{array}{r} \text{discount} = 500 \\ - 350 \\ \hline \$150 \end{array}$$

$$P = \frac{150}{500} = \frac{15 \cdot 2}{50 \cdot 2} = \frac{30}{100} = 30\% \text{ discount}$$

