

Solutions

Part A: Fraction, Decimal, and Percent Conversions

1. Convert 35% to a fraction in simplest form.

$$\frac{35}{100} \xrightarrow{\div 5} \frac{7}{20}$$

3. Convert 3/5 to a decimal.

$$\frac{3}{5} = \frac{6}{10} = 0.6$$

5. Convert 0.875 to a fraction.

$$\frac{875}{1000} = \frac{35}{40} \xrightarrow{\div 5} \frac{7}{8}$$

7. Convert 18% to a decimal.

0.18 % → dec is ÷ 100

2. Convert 0.6 to a percent.

$$\frac{6}{10} = \frac{60}{100} = 60\%$$

4. Convert 125% to a fraction.

$$\frac{125}{100} \xrightarrow{\div 25} \frac{5}{4} = 1\frac{1}{4}$$

6. Convert 4/25 to a percent.

$$\frac{4}{25} \xrightarrow{\times 4} \frac{16}{100} = 16\%$$

8. Convert 7/8 to a percent.

$$\frac{7}{8} = \frac{875}{1000} = 0.875 \xrightarrow{\times 100} 87.5\%$$

$$0.6 \times 100 = 60\%$$

Part B: For each question show a) The amount saved b) The sales Price

9. A jacket costs \$80. It is 10% off.

$$\text{Saved} = 10\% \text{ of } 80 \\ = 0.10 \times 80 \\ = 8$$

$$\text{Sales Price} = \text{Cost} - \text{Saved } \$ \\ = \$80 - \$8 \\ = \$72$$

11. A video game costs \$60. It is 20% off.

$$\text{Saved} = 20\% \text{ of } 60 \\ = 0.20 \times 60 \\ = \$12$$

$$\text{Sales Price} = \text{Cost} - \text{Saved } \$ \\ = 60 - 12 \\ = \$48$$

13. A bicycle helmet costs \$50. It is 30% off.

$$\text{Saved} = 30\% \text{ of } 50 \\ = 0.30 \times 50 \\ = \$15$$

$$\text{Sales Price} = \text{Cost} - \text{Saved } \$ \\ = \$50 - \$15 \\ = \$35$$

10. A pair of shoes costs \$120. It is 15% off.

$$\text{Saved} = 15\% \times \$120 \\ = 0.15 \times 120 \\ = \$18$$

$$\text{Sales Price} = \text{Cost} - \text{Saved } \$ \\ = \$120 - \$18 \\ = \$102$$

12. A backpack costs \$95. It is 25% off.

$$\text{Saved} = 25\% \text{ of } 95 \\ = 0.25 \times 95 \\ = 23.75$$

$$\text{Sales Price} = \text{Cost} - \text{Saved } \$ \\ = \$95 - 23.75 \\ = 71.25$$

14. A winter coat costs \$200. It is 40% off.

$$\text{Saved} = 40\% \times 200 \\ = 0.40 \times 200 \\ = 80$$

$$\text{Sales Price} = \text{Cost} - \text{Saved} \\ = 200 - 80 \\ = 120$$

Solutions

Part C: 15% Sales Tax

15. A book costs \$24. Find the final price after tax.

$$\begin{aligned} \text{Tax} &= 15\% \text{ of Cost} \\ &= 0.15 \times \$24 \\ &= 3.60 \end{aligned}$$

$$\begin{aligned} \text{Cost with tax} &= \text{Cost} + \text{Tax} \$ \\ &= \$24 + 3.60 \\ &= \$27.60 \end{aligned}$$

16. A board game costs \$40. Find the final price after tax.

$$\begin{aligned} \text{Tax} &= 0.15 \times 40 \\ &= 6 \end{aligned}$$

$$\begin{aligned} \text{Cost w Tax} &= \text{Cost} + \text{Tax} \$ \\ &= 40 + 6 \\ &= \$46 \end{aligned}$$

17. A pair of headphones cost \$75. Find the final price after tax.

$$\begin{aligned} \text{Tax} &= 0.15 \times 75 \\ &= 11.25 \end{aligned}$$

$$\begin{aligned} \text{Cost w tax} &= \text{Cost} + \text{Tax} \$ \\ &= 75 + 11.25 \\ &= \$86.25 \end{aligned}$$

18. A hoodie costs \$60. Find the final price after tax.

$$\begin{aligned} \text{Tax} &= 0.15 \times 60 \\ &= 9 \end{aligned}$$

$$\begin{aligned} \text{Cost w tax} &= \text{Cost} + \text{Tax} \\ &= \$60 + \$9 \\ &= \$69 \end{aligned}$$

19. A coat is on sale for \$45 after 20% discount. What was the original price of the coat?

$$80\% \text{ of Reg} = 45$$

$$0.8R = 45$$

$$\frac{0.8R}{0.8} = \frac{45}{0.8}$$

$$R = 56.25$$

20. A sled is on sale for \$65 after 15% discount. What was the original price of the sled?

$$85\% \text{ of } R = 65$$

$$0.85R = 65$$

$$\frac{0.85R}{0.85} = \frac{65}{0.85}$$

$$R = 76.47$$

Solutions

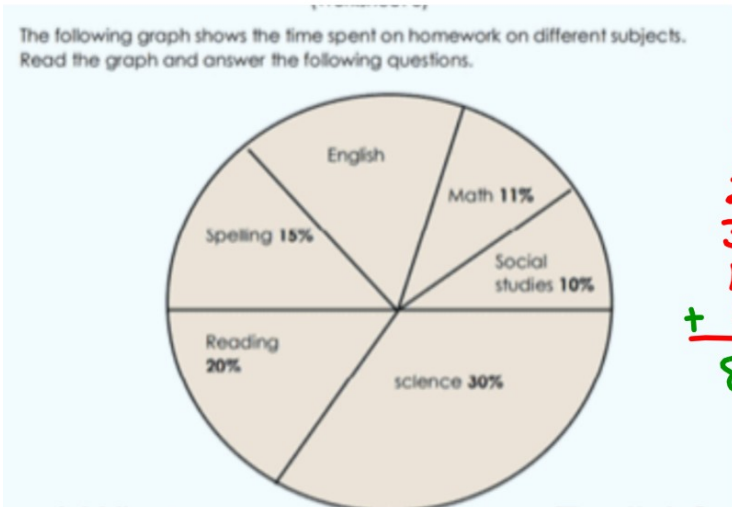
21. In a class of 30 students, 60% of the class have pets, how many students have pets?

$$\begin{array}{l} 60\% \text{ of class} = \text{have pets} \\ \downarrow \\ 0.60 \times 30 \\ = 18 \end{array}$$

22. 7 out of 25 students in the class have on red socks today, what percentage of students have red socks on today?

$$\frac{7}{25} \xrightarrow{\times 4} = \frac{28}{100} \xleftarrow{\times 4}$$

So 28% have red socks on



Solutions

$$\begin{array}{r}
 15\% \\
 20\% \\
 30\% \\
 10\% \\
 11\% \\
 \hline
 86\%
 \end{array}$$

a) What percent is spent on English? $100\% - 86\% = 14\%$

b) If there are 120 students interviewed for this study, then how many do their reading homework?

$$\begin{aligned}
 & 20\% \text{ of } 120 \\
 & = 0.20 \times 120 \\
 & = 24
 \end{aligned}$$

$$\left. \begin{array}{l}
 10\% \text{ of } 120 = 12 \\
 \times 2 \qquad \qquad \times 2 \\
 \hline
 20\% \text{ of } 120 = 24
 \end{array} \right\}$$

c) What is the sector angle size for science?

$$\begin{aligned}
 \text{Sector} &= \% \times 360^\circ \\
 & 30\% \times 360^\circ \\
 & \downarrow \\
 & 0.30 \times 360^\circ \\
 & 108^\circ
 \end{aligned}$$

$$\left. \begin{array}{l}
 10\% \text{ of } 360^\circ = 36 \\
 \times 3 \qquad \qquad \times 3 \\
 \hline
 30\% \text{ of } 360^\circ = 108
 \end{array} \right\}$$