

Quiz 1

Every answer must be fully justified. Show your work!!!

Useful Formulas: $A = P(1 + rt)$ $A = P\left(1 + \frac{r}{n}\right)^{nt}$

1. Express each of the following as a percent.

a. $\frac{7}{10}$

$$\frac{7}{10} = \frac{70}{100} = 70\%$$

b. $\frac{2}{5}$

$$\frac{2}{5} = \frac{40}{100} = 40\%$$

c. $\frac{32}{200}$

$$\frac{32}{200} = \frac{16}{100} = 16\%$$

d. 0.61

$$0.61 = 61\%$$

e. 0.0438

$$0.0438 = 4.38\%$$

f. 2.06

$$2.06 = 206\%$$

2. Suppose that the local sales tax is 7% and you purchase a \$200 coat. What is the coat's total cost?

$$\begin{aligned} \text{Total Cost} &= \$200 + 7\% \text{ of } \$200 \\ &= 200 + (0.07)(200) \\ &= 200 + 14 \\ &= \$214 \end{aligned}$$

3. If the funding in a budget was \$8,000 last year and it is \$7,800 this year, what is the percent decrease in the budget?

$$\text{The decrease in the budget was } \$8,000 - \$7800 = \$200.$$

$$\text{So the percent decrease was } \frac{200}{8000} = 0.025 = 2.5\%$$

4. Suppose that you have \$5000 to deposit in a bank account. How much will be in the account after 10 years if the bank offers an annual interest rate of:

(a) 4.5% in simple interest.

$$\begin{aligned} A &= P(1 + rt) \\ &= 5000(1 + (0.045)(10)) \\ &= \$7250 \end{aligned}$$

(b) 4.5% compounded monthly.

$$\begin{aligned} A &= P\left(1 + \frac{r}{n}\right)^{nt} \\ &= 5000\left(1 + \frac{0.045}{12}\right)^{(12)(10)} \\ &= \$7834.96 \end{aligned}$$