Simple Interest

1. A student takes out an emergency loan for $800.00 to pay for school supplies. The interest rate is 7.5%. How much interest does the student have to pay after 3 months?
2. An investor deposits $5,000.00 into a savings account for two years. The account pays 7.5% annually. What is the principal after two years?
3. A student needs a 60 day loan for $800.00. The annual interest rate is 16%. How much does the student owe the lender after the 60 days?
Simple Interest

1. A student takes out an emergency loan for $800.00 to pay for school supplies. The interest rate is 7.5%. How much interest does the student have to pay after 3 months?

\[ I = PRT \]

\[ I = ? \]
\[ P = 800.00 \]
\[ R = 0.075 \]
\[ T = \frac{3}{12} \text{ years} = 0.25 \text{ years} \]

\[ I = P \times R \times T \]
\[ I = (800.00)(0.075)(0.25) \]

\[ I = 15.00 \text{ Amount of Interest} \]

Therefore, after 3 months the student pays back $800.00 + 15.00 = $815.00
2. An investor deposits $5,000.00 into a savings account for two years. The account pays 7.5% annually. What is the principal after two years?

\[ I = PRT \]

\[ I = ? \]
\[ P = $5,000.00 \]
\[ R = 0.075 \]
\[ T = 1 + \frac{1}{2} \text{ years} \]

**1st Year:**

\[ I = PRT \]
\[ I = (5000.00)(0.075)(1) = 375.00 \]

Therefore, after 1 year the principal is now $5,000.00 + 375.00 = 5,375.00

**2nd Year:**

\[ I = PRT \]
\[ I = (5,375.00)(0.075)(1) = 403.13 \]

Therefore, after two years, the principal is $5,375.00 + 403.13 which equals $5,778.13.
3. A student needs a 60 day loan for $800.00. The annual interest rate is 16%. How much does the student owe the lender after the 60 days?

\[ I = PRT \]

\[ I = ? \]
\[ P = 800.00 \]
\[ R = 0.16 \]
\[ T = \frac{60}{360} \text{ years} = \frac{1}{6} \text{ years}. \]

Note: In this financial calculation we assume that 360 days = 1 year. But remember that there are normally 365 days per year except for leap years which have 366 days!

\[ I = PRT \]
\[ I = (800.00)(0.16)(\frac{1}{6}) \]
\[ I = 21.33 \] This is the amount of interest owed.

Therefore, after the 60 days, the student owes the lender $800.00 + 21.33 which is $821.33.