6.6   Simple & Compound Interest

Money can be deposited in a savings account to earn more money.

The amount of interest (I) depends upon the following:

- the principal (p): the money deposited

- the rate (r): a percent *expressed as a decimal*

- the time (t): given in years

interest = principal × rate × time

I   p   r   t

$$I = p \times r \times t$$

Example: Find the interest to the nearest cent.

a.) $75 at 12% for 6 years

$$I = prt = 75 \cdot 0.12 \cdot 6 = \$54$$

b.) $2,250 at 6% for 4 years

$$I = prt = 2250 \cdot 0.06 \cdot 4 = \$540$$

Example: Find the interest to the nearest cent.

c.) $3,500 at .10% for 5 years

$$I = prt = 3500 \cdot 0.10 \cdot 5 = \boxed{\$1750}$$

d.) $4,000 at 4.25% for 1 year

$$I = prt = 4000 \cdot 0.0425 \cdot 1 = \boxed{\$170}$$

Example: Find the interest to the nearest cent.

e.) $1,800 at 6.5% for 2 years

$$I = prt = 1800 \cdot 0.065 \cdot 2 = \boxed{\$234}$$

f.) $160 at 5.5% for 1.25 years

$$I = prt = 160 \cdot 0.055 \cdot 1.25 = \boxed{\$11}$$

Example: Find the interest to the nearest cent.

g.) $350 at 6% for 6 months $\frac{6}{12} = 0.5$

$I = prt = 350 \cdot 0.06 \cdot 0.5 = \boxed{\$10.50}$

h.) $7,050 at 6% for 3 months $\frac{3}{12} = 0.25$

$I = prt = 7050 \cdot 0.06 \cdot 0.25 = \boxed{\$105.75}$

Example: Mr. Webster borrowed $1280 to buy a new swimming pool. He will pay $57.60 each month for the next 24 months. Find the simple interest rate? for his loan.

$\frac{24}{12} = 2$

$I = prt$

$57.60 = 1280 \cdot r \cdot 2$

$57.60 = 2560 \cdot r$

$\div 2560 \qquad \div 2560$

$57.60 \div 2560 = r$

$0.0225 = r \qquad \boxed{r = 2.25\%}$