

Name \_\_\_\_\_

Date \_\_\_\_\_

Aim: How do we find simple interest?

Do Now:

Jane wants to borrow \$1500 from her parents. They agree to lend her the money provided she pay a "rental fee" of 6% of the amount borrowed for each year that she keeps the money. Jane repays her parents after  $2\frac{1}{2}$  years.

a) How much did it cost Jane to borrow the money from her parents?

$$(.06)(1500)(2.5) \\ \$ 225$$

b) How much did she repay her parents in total?

$$1500 + 225 \\ \boxed{\$1725}$$

### VOCABULARY

1) Interest: money earned on money borrowed or invested

2) Principal: amount of money borrowed or invested

3) Interest: % at which money is borrowed or invested

4) Time: length of loan or investment

5) Payback: principal + interest

6) Formula:  $I = PRT$

Interest = principal · rate · time

- 1) A person puts \$2500 into a savings account that earns 5% interest per year for 3 years. Find the amount of interest earned on the account. How much is in the account at the end of the 3 years?

$$I = prt$$

$$I = (2500)(.05)(3)$$

$$I = 375$$

$$\begin{array}{r} 2500 \\ + 375 \\ \hline \boxed{\$2875} \end{array}$$

- 2) Find the interest earned on an account if you deposit \$3000 at an annual rate of 4.5% for 4 years.

$$I = PRT$$

$$I = (3000)(.045)(4)$$

$$\boxed{I = \$540}$$

- 3) \$9575 was borrowed for 2 years at a cost of \$550. What was the rate of interest?

$$I = PRT$$

$$550 = 9575(n\%)(2)$$

$$\frac{550}{19150} = \frac{19150 n\%}{19150}$$

$$\boxed{2.9\%}$$

$$0.0287 = n\%$$

- 4) You have a summer job as a delivery person at a local grocery store. Suppose you save \$1400 of your pay and deposit into an account that earns simple interest. After 9 months the balance is \$1421. What is the annual interest rate?

$$I = PRT$$

$$21 = (1400)(n\%)\left(\frac{9}{12}\right)$$

$$\frac{21}{1050} = \frac{1050 n\%}{1050}$$

$$\begin{array}{l} 0.02 = n\% \\ 2\% \end{array}$$

- 5) \$8500 was borrowed at 12% per year for 3 months. What is the interest and how much was paid back at the end of the 3 months?

$$I = PRT$$

$$I = (8500)(.12)\left(\frac{3}{12}\right)$$

$$I = \$255$$

$$\begin{array}{r} 8500 + 255 \\ \hline \boxed{\$8755} \end{array}$$

- 6) You have the option of purchasing a car for \$26,492 paying cash in full or financing it at 2.9% for 3 years and only paying \$23,400 for the car. Which is a better deal? Explain.

$$I = PRT$$

$$I = (23400)(.029)(3)$$

$$I = 2035.80$$

vs. \$26,492