


3-13-17

Aim: SWBAT use the simple interest formula to solve for I, P, R, or T.

Do Now: Convert months to years.

Ex. 3 months = $\frac{1}{4}$ year = 0.25 years

$\frac{3}{12}$ 

HW: WS

Quick Quiz Wednesday (I = PRT only)

Write the fraction and decimal that represents the given number of months as a portion of a year.

3 months $\frac{3}{12} = \frac{1}{4}$ year ; 0.25 years

4 months $\frac{4}{12} = \frac{1}{3}$ year ; $0.\bar{3}$ years *

6 months $\frac{6}{12} = \frac{1}{2}$ year ; 0.5 years

9 months $\frac{9}{12} = \frac{3}{4}$ year ; 0.75 years

12 months $\frac{12}{12} = \frac{1}{1} = 1$; 1

18 months $\frac{18}{12} = \frac{3}{2}$ year ; 1.5 years

20 months $\frac{20}{12} = \frac{5}{3}$ year ; $1.\bar{6}$ years *

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

if the decimal repeats, use the fraction.

Interest: the amount of money earned or paid for the use of money.

- A savings account earns you interest.
- A loan requires you to pay interest.

Simple Interest Formula: $I = PRT$

I: the amount of interest (dollars)

P: the principal amount of money you started with (dollars)

R: the interest rate. (% becomes a decimal)

T: the time (amount in years)

Using Percents

In class/ homework

Solve.

1. Judy Adler is saving money for a trip that will cost \$1000. She has had \$800 in the bank for a year at $7\frac{1}{2}\%$ annual interest. Does she have enough money for the trip? If not, how much more does she need?

$$I = PRT$$

$$I = (800)(0.075)(1)$$

$$I = \$60$$

$$\text{Total} = P + I$$

$$\text{Total} = 800 + 60$$

$$\text{Total} = \$860$$

$$\$1000 - \$860 = \$140$$

No, she
needs \$140
more.

2. Sam Herman wants to put a new roof on his house. He plans to borrow the \$1500 it will cost. The bank will charge $18\frac{1}{2}\%$ annual interest for two years. How much will Sam have to pay back?

$$I = PRT$$

$$I = (1500)(0.185)(2)$$

$$I = \$555$$

$$\text{Total} = P + I$$

$$\text{Total} = 1500 + 555$$

$$\text{Total} = \$2055$$

3. Marvin is borrowing \$600 from his father for $2\frac{1}{2}$ years. His father is charging him 5% annual interest. What will Marvin owe his father?

4. Mr. Alexander borrows \$1450 from a bank at $17\frac{1}{2}\%$ annual interest for $3\frac{1}{2}$ years. Is \$2300 enough to pay back the loan?

Use $I = PRT$ to find the missing value.

1. $I = \$89.25$, $P = \$850$, $R = 5.25\%$, $T = ?$

$$I = PRT$$

$$89.25 = (850)(0.0525)T$$

$$\frac{89.25}{44.625} = \frac{44.625T}{44.625}$$

$$2 = T$$

Using Percents

In class/ homework

Solve.

5. Sally is saving money for a new car. She has had \$6540 in a savings account for $1\frac{1}{2}$ years, earning $7\frac{3}{4}\%$ annual interest. Does she have enough to purchase a \$7295 car?
6. Phyllis is borrowing \$1200 for college tuition from her grandmother at 6% annual interest for two years. If Phyllis wants to repay the loan in 12 equal payments, how much would each payment be?
7. Mildred Fleer borrows \$2500 from the bank at $16\frac{1}{2}\%$ annual interest. The loan is due in $2\frac{1}{2}$ years. Is \$3500 enough to repay the loan when it is due?
8. Sol Jimenez borrowed \$1100 to repair his car. He has a loan at $15\frac{1}{2}\%$ annual interest for $1\frac{1}{2}$ years. What will he owe when the loan is due?