

ALGEBRA - Simple Interest Worksheet Name: _____

THE Simple Interest formula is:

$$\boxed{I = Prt}$$

WHERE P = Principal, the amount of money you have to invest. (\$) You put your principal in the bank.

r = interest rate (% per time, usually years). This is how much (as a % of your principal) the bank pays you for the privilege of using your money while safekeeping it for you. Remember to convert % to a decimal before using it in the formula, and back to % when done. Example $.03 = 3\%$ per year. Keep time units consistent with units for " t " if needed.

t = time, usually in years. Keep consistent with "rate".

I = Interest Earned, your "prize" - how much extra (above the principal) the bank gives you back at the end of time t .

Ex 1: You invest \$500 for 1 year at 2%, how much do you earn? $I = Prt$

$$I = 500(.02)1 \quad \therefore I = \$10$$

So at the end of 1 year, you withdraw \$510 from the bank. Your money earned you \$10. Hint: you need either a lot of money (a big principal) or a big interest rate in order to make much money this way.

You can transform $I = Prt$ into:

$$\boxed{P = \frac{I}{rt}}$$

OR

$$\boxed{r = \frac{I}{Pt}}$$

OR

$$\boxed{t = \frac{I}{Pr}}$$

} Do you see why I call these "3 out of 4" problems?

Solve:

- ① You invest \$5000 for 2 years at 3%. Find I .
- ② You make \$50 in interest after investing \$1000 for 1 year. Find r .
- ③ You invest 10,000. After 1 year your account is at \$11,000. Find r .