

SIMPLE INTEREST

MEL 3E

- You already know that interest is added on
- There are two situations where you have to be concerned about interest

- For these, interest is good!
- It is added on to the amount you already have
- It is what makes your investments grow

1. Investments

- For these, interest is bad!
- It is added on the amount you already owe
- It is what makes banks, credit card companies and loan sharks money

2. Loans

- You do not receive interest on the interest
- You get the interest at the end, when you withdraw your money
- Simple interest is calculated in 2 steps

$$1000 + 1000 = 2000$$
$$1000 + 10 = 1100$$
$$1100 + 110 = 1210$$

What is Simple Interest ?

- Use the equation:

$$I = P \times R \times T$$

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- I is the interest
- P is the amount you invested, called the principal
- r is the rate, as a decimal $\div 100$
- t is the time, in years

Step 1

- Add the principal and the interest together to get the total amount
- This is sometimes given by the equation:

$$\begin{array}{l} A = P + I \\ \text{Amount} \end{array}$$

Step 2

Taylor deposits \$^P6000 at 5% per annum
(annum means year). For ~~42~~ ^T6 years

a) Find the interest Taylor has earned

$$R = 0.05$$

$$\begin{aligned} I &= P \times R \times T \\ &= 6000 \times 0.05 \times 6 \\ &= 1800 \end{aligned}$$

Example 1

Taylor deposits \$6000 at 5% per annum (annum means year).

b) Find the total amount of Taylor's investment

$$A = P + I$$
$$6000 + 1800 = 7800$$

Example 1

- Sometimes, the time is given to us in months, not years

- To change months to years, divide by ~~52~~¹²

- For example:

$$72 \text{ months} = 72 \div 12 = 6 \text{ years}$$

Years

John deposits \$1500 in the bank for ~~100~~^P months and receives 3.25% interest. Determine the amount of money after that time.

$$100 \div 12 = 8.33$$

$$3.25 \div 100 = 0.0325$$

$$I = 1500 \times 8.33 \times 0.0325$$

$$I = 406.09$$

$$A = 1500 + 406.09 = 1906.09$$

Example 2

John deposits \$1500 in the bank for 100 months and receives 3.25% interest. Determine the amount of money after that time.

Example 2

- Guaranteed Investment Certificate

- A way to invest your money, at a slightly higher interest rate than a savings account

- The interest is guaranteed

What is a GIC?

- Your money is locked in for the term (time) of the GIC
- Shorter term = lower interest rate
- Longer term = higher interest rate

What is a GIC?