Simple interest

Interest = P x R x T

P: Principle, initial amount

R: Interest rate per year (decimal)

T: Time in year

1. Ken invested $ 50 000 in a bank account that paid 2.5 % annual simple interest for 10 years.

(a) Find the total amount of interest Ken would earn.

(b) Find Ken's investment after 10 years.

2. John invested $ 2 300 in a bank account that paid 1.2 % annual simple interest for 5 years.

(a) Find the total amount of interest John would earn.

(b) Find John's investment after 15years.

Compound Interest

$$\text{Total} = P\left(1 + \frac{r}{n}\right)^{nt}$$

P: Principle, initial amount

r: Interest rate per year (decimal)

n: Number of times received interest per year

t: Time in year

1. Kelvin invests $3 000 in a bank that offers compound interest at a rate of 4.5% per annum, **compounded yearly**.

Find the total investment after 6 years.

2. Jason invests $300 000 in a bank that offers compound interest at a rate of 1.5 % per annum, **compounded half-yearly**.

(a) Find the total investment after 3 years.

(b) Find the amount of interest after 3 years.

3. Sarah invests $18 000 in a bank that offers compound interest at a rate of 1.4 % per annum, **compounded quarterly**.

(a) Find the total amount in Sarah's account after these 2 years.

(b) Find the amount of interest after 2 years.

Paper 2

1. Nick has $150 000 in a trust fund. Each year he donates 8 % of the money remaining in his trust fund to charity.

(a) Determine the maximum number of years Nick can donate to charity while keeping at least $50 000 in the trust fund.

Louise invests $200 000 in a bank account that pays a nominal interest rate of 5 % , **compounded quarterly**, for eight years.

(b) Calculate the value of Louise's investment at the end of this time.

Give your answer correct to the nearest cent.