

Simple and Compound Interest

1. Find the simple interest earned on \$6000 at 12% pa for 5 years.

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

$$I = \$6000 \times 12\% \times 5$$

simple interest earned =
\$3600

Successfully applied the simple interest formula and recognised that depreciation decreases the value of an item

2. A new car, valued at \$28 000, depreciates at 9% pa. Find the value of the car 3 years after purchase.

$$A = P(1-r)^T$$

$P = 28000$
 $R = 9\%$
 $T = 3$

$$A = 28000(1-9\%)^3$$

value after 3 yrs
~~≠~~ = \$21099.98

3. (a) Using the compound interest formula, find the amount that \$5000 will grow to when invested at a rate of 12% pa for 2 years, compounded quarterly.

$P = 5000$
 $R = 12\%$
 $T = 2$

compounded interest
~~= \$12379.28~~
compound interest
 $P(1+r)^T = \$6272 \div 4$ (quarterly)
 $5000(1+12\%)^2 \times 4$ (quarterly)?
quarterly interest
= \$1568.

Indicated an understanding of components of the compound interest formula, but incorrectly applied the concept of quarterly interest

- (b) Find the interest earned.

$$5000 + 6272$$

interest earned
= \$11272.

4. \$240 interest is earned on a principal of \$1500 at a simple interest rate of 4% pa. For how many years was the principal invested?

$I = 240$ interest earned
 $P = 1500$ over 6 yrs.
 $R = 4\%$ per year

$$\frac{240}{1500} = \frac{1500 \times 4\%}{1500 \times 0.16 \times 4\%}$$

Attempted to apply the simple interest formula to calculate the number of years the principal was invested

