

SIMPLE AND COMPOUND INTEREST

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SIMPLE INTEREST

- Simple Interest – You only get interest on the initial amount invested/borrowed
- Thembi wants to borrow money from Absa. She borrows R5000 and is given simple interest of 12.5% p.a. for 3 years.
- Calculate the interest Thembi will earn.
- Initial \times interest rate \times years
- $R5\ 000 \times 12.5/100 \times 3$
- =R1 875 – only interest
- Calculate the total amount to be paid
- $R5\ 000 + R1\ 875$
- =R6 875

IMPORTANT:

- WITH SIMPLE INTEREST YOU CAN MULTIPLY WITH THE NUMBER OF YEARS.
- THE ANSWER WILL BE ONLY THE INTEREST. IF YOU ARE ASKED FOR THE TOTAL AMOUNT, YOU MUST ADD THE INITIAL AMOUNT

COMPOUND INTEREST

- Every year you will get/pay a different amount of interest.
- Thabiso invests R5 000 for 3 years at 12.5% compounded interest p.a
- How much money will Thabiso have at the end of the 3 years.
- 100% +12.5% =112.5%
- 5 000 ?
- $5\,000 \times 112.5/100 = 5\,625$
- $5\,625 \times 112.5/100 = 6\,328.13$
- $6\,328.13 \times 112.5/100 = 7\,119.15$
- How much interest did he earn?
- $R7\,119.15 - R5\,000 = R2\,119.15$

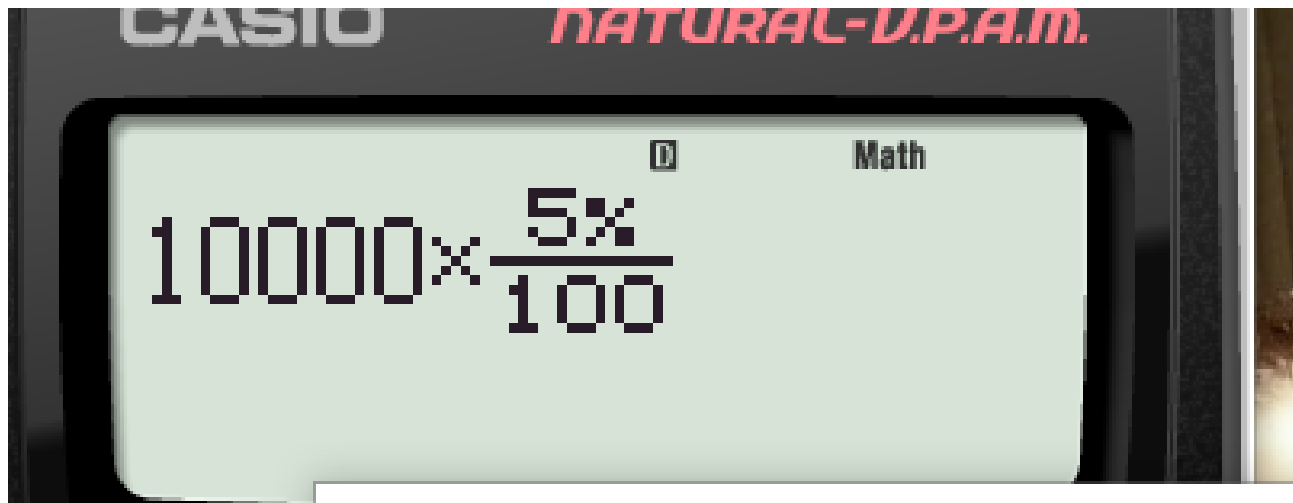
IMPORTANT

- WITH COMPOUND INTEREST YOU CAN NOT MULTIPLY WITH THE NUMBER OF YEARS.
- YOU NEED TO DO EVERY YEAR SEPARATELY.
- THE ANSWER GIVES YOU THE TOTAL AMOUNT AT THE END OF THAT YEAR.
- YOU ARE NOT ALLOWED TO USE THE FORMULAE YOU WERE TAUGHT IN PURE MATHS.
- YOU ARE ONLY EXPECTED TO CALCULATE COMPOUND INTEREST FOR 3 TIME FRAMES.

ANOTHER EXAMPLE

- Frank invests R10 000. The bank offers him 5% p.a. interest compounded monthly. How much money will he have after 2 months?
- If interest are compounded monthly, you must divide the interest with the number of months in a year.
- Month1. $10\ 000 \times \frac{5\%}{12} = 41.67$
- Month 2. $10\ 041.67 \times \frac{5\%}{12} = 41.84$
- At the end of 2 months
- = $10\ 041.67 + 41.84$
- = R10 083.51

IMPORTANT: WHEN YOU ENTER IT INTO YOUR CALCULATOR, YOU MUST ALSO ENTER THE % SIGN.
(SHIFT AND OPEN BRACKET)



- Kevin Borrows R6 500 at 15% p.a compounded bi-annually. How much will he have to repay after 2 years.
- Bi-annually means half years. Since there are 2 half-years in a year, we need to divide the interest with 2.

- $6500 \times \frac{15\%}{2} = 487.50$
- $6\ 987.50 \times \frac{15\%}{2} = 524.06$
- $7\ 511.56 \times \frac{15\%}{2} = 563.37$
- $8\ 074.93 \times \frac{15\%}{2} = 605.62$
- $8\ 074.93 + 605.62 = 8680.55$

Homework:

- Exercise 1
- Page 119
- Nr 1 - 3