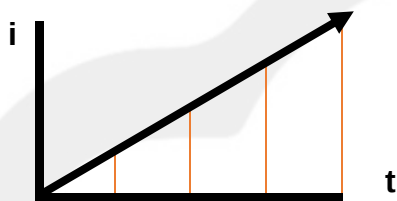


Simple Interest

Simple Interest

Interest occurs when money is borrowed. This borrowed money needs to be returned with a fee. This fee is known as **interest**.

Simple interest is calculated based on the amount initially borrowed or invested. The amount does not change and accumulates linearly over time.



EXAMPLE:

If you borrow **\$100** from the bank and do not pay it back in a year ($t = 1$), the bank may charge an annual fee of **\$3**. This fee is your interest and is added to the amount you borrowed.

You now owe **\$103**.

If you do not pay the \$103 back in the next year ($t = 2$), another **\$3** interest fee will be added to your loan.

You now owe **\$106**.

The simple interest formulas are

$$I = Prt \quad A = P(1 + rt)$$

I = interest, P = principal amount (initial), A = total amount,
 r = interest rate (decimal) and t = time period

Instructions: Answer the questions below, rounding to two decimals.

1

Find the interest amount.

$$P = \$325$$

$$r = 5\% \text{ p.a.}$$

$$t = 3 \text{ years}$$



2

Find the total amount owed.

$$P = \$133$$

$$r = 1.77\% \text{ p.a.}$$

$$t = 2 \text{ years}$$

3

Find the principal amount.

$$I = \$136$$

$$r = 1.85\% \text{ p.a.}$$

$$t = 4 \text{ years}$$

4

Find the interest rate per annum.

$$I = \$36$$

$$P = \$530$$

$$t = 2 \text{ years}$$

5

Find the interest amount.

$$P = \$732$$

$$r = 6.9\% \text{ per month}$$

$$t = 1 \text{ year}$$



6

Find the time (round to nearest whole number).

$$A = \$347$$

$$P = \$192$$

$$r = 3.28\% \text{ per month}$$

7

Find the interest rate per annum.

$$I = \$363$$

$$P = \$2590$$

$$t = 18 \text{ months}$$

8

Find the principal amount.

$$I = \$655$$

$$r = 7.25\% \text{ per month}$$

$$t = 2 \text{ years}$$

9

Find the interest amount.

$$P = \$286$$

$$r = 3.25\% \text{ per year}$$

$$t = 18 \text{ months}$$



10

Find the total amount owed.

$$P = \$984$$

$$r = 8.98\% \text{ per month}$$

$$t = 4 \text{ quarters}$$

11

Find the interest rate per quarter.

$$A = \$4580$$

$$P = \$3886$$

$$t = 2 \text{ years}$$

12

Find the principal amount.

$$I = \$2280$$

$$r = 6.73\% \text{ per quarter}$$

$$t = 5 \text{ years}$$

13

Find the time (round to nearest whole number).

$$A = \$5528$$

$$P = \$2771$$

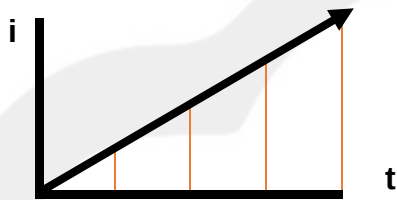
$$r = 6.85\% \text{ p.a.}$$

Simple Interest

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Interest occurs when money is borrowed. This borrowed money needs to be returned with a fee. This fee is known as **interest**.

Simple interest is calculated based on the amount initially borrowed or invested. The amount does not change and accumulates linearly over time.



EXAMPLE:

If you borrow **\$100** from the bank and do not pay it back in a year ($t = 1$), the bank may charge an annual fee of **\$3**. This fee is your interest and is added to the amount you borrowed.

You now owe **\$103**.

If you do not pay the \$103 back in the next year ($t = 2$), another **\$3** interest fee will be added to your loan.

You now owe **\$106**.

The simple interest formulas are

$$I = Prt \quad A = P(1 + rt)$$

I = interest, P = principal amount (initial), A = total amount,
 r = interest rate (decimal) and t = time period

Instructions: Answer the questions below, rounding to two decimals.

1

Find the interest amount.

$$P = \$1440$$

$$r = 7.35\% \text{ p.a.}$$

$$t = 2 \text{ years}$$



2

Find the interest rate per annum.

$$I = \$450$$

$$P = \$378$$

$$t = 8 \text{ years}$$

3

Find the total amount owed.

$$P = \$4575$$

$$r = 3.41\% \text{ per quarter}$$

$$t = 16 \text{ months}$$

4

Find the interest amount.

$$P = \$1028$$

$$r = 5.2\% \text{ per month}$$

$$t = 6 \text{ quarters}$$

5

Find the principal amount.

$$I = \$5558$$

$$r = 5.96\% \text{ p.a.}$$

$$t = 12 \text{ years}$$



6

Find the interest amount.

$$P = \$4538$$

$$r = 9.82\% \text{ p.a.}$$

$$t = 15 \text{ months}$$

7

Find the interest rate per annum.

$$I = \$862$$

$$P = \$10,573$$

$$t = 18 \text{ months}$$

8

Find the time (round to nearest whole number).

$$A = \$998$$

$$P = \$553$$

$$r = 8.77\% \text{ per quarter}$$

9

Find the total amount owed.

$$P = \$4684$$

$$r = 8.85\% \text{ p.a.}$$

$$t = 9 \text{ months}$$



10

Find the time (round to nearest whole number).

$$A = \$4657$$

$$P = \$3873$$

$$r = 2.29\% \text{ p.a.}$$

11

Find the interest amount.

$$P = \$7770$$

$$r = 4.25\% \text{ per quarter}$$

$$t = 3 \text{ years}$$

12

Find the time (round to nearest whole number).

$$A = \$15,392$$

$$P = \$9993$$

$$r = 5.56\% \text{ per month}$$

13

Find the principal amount.

$$I = \$12,115$$

$$r = 9.05\% \text{ per month}$$

$$t = 4.5 \text{ years}$$