Rachael borrowed $4500 for one year from C. Perk Bank, the maturity value of the note was $5,000. Was this loan based on simple interest or simple discount?

We can’t tell from the information given.

If we assume it was Simple Discount

- \( D = 5000 - 4500 = 500 \)
- \( M = 5000 \)
- \( d = ??? \)
- \( T = 1 \text{ year} \)

We can find the Simple Discount Rate

\[
D = MdT \\
500 = 5000 \times d \times 1 \\
\frac{500}{5000} = d \\
\frac{0.1}{0.1} = d
\]

So the Simple Discount Rate is 10%.

If we assume it was Simple Interest

- \( I = 5000 - 4500 = 500 \)
- \( P = 4500 \)
- \( R = ??? \)
- \( T = 1 \text{ year} \)

We can find the Simple Interest Rate

\[
I = PRT \\
500 = 4500 \times R \times 1 \\
\frac{500}{4500} = R \\
\frac{0.111111...}{0.111111...} = R
\]

So the Simple Interest Rate is 11.11%.
1. Monica invested in bonds $14,100 in bonds whose maturity values totaled $15,000. The bonds had a term of 18 months, and a simple discount rate of 4%. What would the equivalent simple interest rate be?

2. (Optional) Gunther invested in a 1 year discount note with a face value of $1,000 face value and a simple discount rate of 5%. What would the equivalent simple interest rate be?

3. Ross is choosing between two investments. He planned to invest in a $5000 face value, 10 month simple discount note issued by A.Bank with a simple discount rate of 6.5%. But then company offered to borrow the same money from him for 6.75% simple interest. Which is a better deal?

4. (Optional) The Ralph Lauren company has 100,000 they don’t need to spend for the next 6 months. They put Rachel in charge of determining where to invest it. Rachel found a 100,000 face value simple discount note with a term of 6 months and a simple discount rate of 8.2%. Being a diligent worker, Rachel also finds an investment that pays 8.6% simple interest (for the same 6 month term). Which should Rachel choose?

5. Joey is expecting a $2000 royalty check from an acting gig in 1 week, but he needs money now. A Payday lender offers to cash the check now for a fee of 1.5% of the amount. Find the equivalent simple interest and simple discount rates.

6. (Optional) Phoebe is expecting a $600 royalty check from the ‘smelly cat’ single in 2 weeks, but she needs money now. A Payday lender offers to cash the check now for a fee of 0.5% of the amount plus an additional service fee of $5. Find the equivalent simple interest rate.