



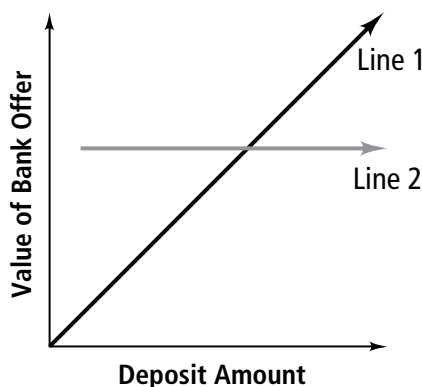
CCSS: 7.RP.A.2: Recognize and represent proportional relationships between quantities. 7.RP.A.3: Use proportional relationships to solve multistep ... percent problems. Examples: simple interest ...

Launch

SAMPLE SOLUTIONS ARE SHOWN BELOW.

MP1, MP4

Two banks offer different incentives to make a deposit at their bank. Bank A offers a \$10 gift card for making a minimum initial deposit. Bank B offers cash back equal to 2% of your deposit at the end of the year. Tell which line represents each bank's offer. Explain your reasoning.



Bank A's Offer: Line 2 represents Bank A's offer. No matter how much money you deposit, as long as it meets a minimum amount, you get the same \$10 gift card.

Bank B's Offer: Line 1 represents Bank B's offer. The amount of cash back is the value of the bank offer. The value will increase depending on your deposit amount because 2% of a greater number is more than 2% of a lesser number. Line 1 shows this relationship.

Reflect What would you need to know to decide which offer to choose? Explain.

Sample: You need to know the minimum deposit for Bank A and how much money you are able to deposit. If the amount of your deposit earns you less than \$10 cash back from Bank B and meets Bank A's minimum, you may choose Bank A.

Got It?

PART 1 Got It (1 of 2) mc



Suppose you deposit \$500 in a bank account that earns simple interest at 1.2% per year. You keep it in the bank for two years. Which of the following is/are true?

- I. $I = 12$ II. $p = 1.2\%$
III. $r = 500$ IV. $t = 2$

I and IV

PART 1 Got It (2 of 2)



How does the formula for simple interest after one year relate to the percent equation?

The simple interest formula after one year is a version of the percent equation.

PART 2 Got It



A new bank customer with \$5,000 to deposit looks at the manager's poster. The customer wants to open a CD to earn money for his retirement. If he wants to have \$5,500 in the CD, how long does he need to keep the account?

If you deposit \$2,500 at 3.5% annual interest...		
Time (years)	Simple Interest Earned	New Account Balance
0	\$0.00	\$2,500.00
1	\$87.50	\$2,587.50
2	\$175.00	\$2,675.00
3	\$262.50	\$2,762.50
4	\$350.00	\$2,850.00

3 years

Discuss with a classmate

Choose a row from the table.

Explain what the entries in Columns 1, 2, and 3 mean for the row that you selected.

Take turns until you have reviewed all the rows in the table.

PART 3 Got It (1 of 2)



After 16 months, does Mia still have the higher balance? Explain.

Name on Account: Alex
Principal: \$2,950
Annual interest rate: 4%

Name on Account: Mia
Principal: \$3,000
Annual interest rate: 2.5%

Time: 16 months

$$I = p \cdot r \cdot t$$

$$= 2,950 \cdot 4\% \cdot \frac{16}{12}$$

$$= 2,950 \cdot 0.04 \cdot \frac{4}{3}$$

$$= 118 \cdot \frac{4}{3}$$

$$\approx 157.33$$

Balance = principal + interest

$$= 2,950 + 157.33$$

$$= 3,107.33$$

$$I = p \cdot r \cdot t$$

$$= 3,000 \cdot 2.5\% \cdot \frac{16}{12}$$

$$= 3,000 \cdot 0.025 \cdot \frac{4}{3}$$

$$= 75 \cdot \frac{4}{3}$$

$$= 100$$

Balance = principal + interest

$$= 3,000 + 100$$

$$= 3,100$$

No, Mia does not have the higher balance after 16 months.

Got It?

PART 3 Got It (2 of 2)



Suppose your friend has earned \$5.51 in interest after 9 months. If the annual interest rate is 3%, how much is the principal in the account? Round to the nearest dollar.

\$245

Close and Check

Focus Question

© MP1, MP7

Why is simple interest called “simple”? When would you use simple interest?

Sample: Simple interest might be called “simple” because it is based on the principal only. This makes the interest the same amount every year. You would use simple interest when you have a financial account that applies simple interest to the account.

Do you know HOW?

1. U.S. savings bonds pay 1.4% interest. You purchase \$750 in savings bonds and hold them for $2\frac{1}{2}$ years. Circle the true statement(s).

A. $I = 1.4\%$

B. $p = 750$

C. $r = 26.25$

D. $t = 2.5$

2. You buy \$2,500 of savings bonds at 1.7% interest. How many years will it take for your investment to equal \$3,000? Round your answer to the nearest whole year.

12 years

3. Suppose after 15 months you earn \$74.80 in interest on an investment that earns 1.6% interest. What was your principal investment?

\$3,740

SAMPLE SOLUTIONS ARE SHOWN BELOW.

Do you UNDERSTAND?

4. **Reasoning** You and your friend both have savings accounts that pay 3.5% interest. Do you both earn the same amount of money in interest? Explain how you know.

Not necessarily. The amount of interest earned depends on the account balance.

5. **Error Analysis** Your friend says she has \$75 in her savings account that pays 3.5% interest. She finds the amount of interest earned in one year. Is she correct? Explain.

$$I = 75 \cdot 3.5 \cdot 1$$

$$I = 262.50$$

No. She needs to convert the interest rate to the decimal 0.035 before multiplying. She will earn about \$2.63 in interest.