

Name: \_\_\_\_\_

### Calculating Interest Rates and Fees Practice

*Example: Steve borrowed \$200 with a 5% annual interest rate. How much interest does he pay after one year?*

$$5\% = \frac{5}{100} = 0.05$$

$$\$200 \times 0.05 = \$10$$

You may use a calculator for the following questions.

1. a) Juan wants to borrow a debt of \$300 with a 6% annual interest rate. How much is his total debt after one year?

b) In this scenario, does Juan pay or earn interest?

c) Juan finds another debt option of \$300 with a 3% annual interest rate. Which option should he choose for his debt? Explain.

2. Angel wants to buy a \$200 bike. He could borrow the money from a friend, who will ask for the repayment of the loan after one year, plus \$10 in interest. Or Angel could borrow the money from a bank that charges a 7.5% annual interest rate. From whom should Angel borrow the money? Explain.

3. a) Francine wants to invest \$100. She finds an investment option with a 5% annual interest rate. Calculate the interest after one year.

b) In this scenario, does Francine pay or earn interest?

c) Francine finds another investment option with an 8% annual interest rate. Which option should she choose for her investment? Explain.

4. Allyson has \$500 for an investment. Option A is a savings account with a 5% annual interest rate and no fees. Option B is a stock portfolio with an 8.5% annual interest rate, and it charges a \$10 fee at the end of the year.

a) Calculate the interest and total investment after one year if Allyson chooses Option A.

b) Calculate the interest and total investment after one year if she chooses Option B.

c) Which option should Allyson choose? Explain.

## Calculating Interest Rates and Fees Teacher's Answer Key

1. a) *Interest:*  $(\$300)(0.06) = \$18$   
*Total debt* = \$318

b) Juan pays interest.

c) Student explanations will vary. Students are not required to show calculation in their explanation. Juan should choose the loan option with a lower interest rate because he pays interest in this scenario. 3% annual interest rate is the better choice.  
 $(\$300)(0.03) = \$9$ , which is lower than \$18 in part a.

2.  $\frac{\$10}{\$200} = 0.05 = 5\%$

Student explanations will vary. Angel's friend charges 5% annual interest. Because Angel pays interest in this scenario, he should choose the loan with a lower interest rate. His friend is the better borrowing option.

3. a) \$5

b) Francine earns interest.

c) Student explanations will vary. Students are not required to show calculation in their explanation. Francine should choose the investment option with a higher interest rate because she earns interest in this scenario. 8% annual interest rate is the better choice. 8% yields \$8 in interest, which is higher than \$5 in part a.

4. a) *Interest:*  $(\$500)(0.05) = \$25$ ; *Total investment* =  $\$500 + \$25 = \$525$

b) *Interest:*  $(\$500)(0.085) = \$42.50$ ; *Total investment* =  $\$500 + \$42.50 - \$10 = \$532.50$

c) Allyson should choose Option B. Student explanations will vary. Even with the year-end fee of \$10, Option B still yields a higher return.