SOL 7.4 Notes
Interest, Tax, Tip, & Discount

Interest:

Interest is an amount of money <u>added</u> to an account for the purpose of making money for a bank or company, or to make you money! There is a simple **formula** for calculating interest. It is I = PRT. I represents <u>Interest</u>, P represents <u>Princiapl</u>, R represents <u>Rate</u> and T represents <u>Time</u>. Principal, is the <u>amount of money</u> ($$$) invested or borrowed. Rate is the <u>percent</u> being charged or applied to an account. (Remember to change <u>percent</u> to a <u>decimal</u>) Time is the amount of time represented <u>in YEARS</u>. (There is such a thing as half a year ½ or 0.5, or even a quarter of a year ¼ or 0.25) To calculate interest we simply <u>multiply</u> principal <u>times</u> rate <u>times</u> time.

Example: Mrs. Warren bought her husband a Chevy Colorado pick-up truck for his birthday that cost $15,000. If she borrows the $15,000 at an interest rate of 5% for 5 years, how much interest will she pay back?

I = P x R x T

I = (P)15,000 (money borrowed) x (R) <u>0.05</u> (5% changed to a decimal) x (T) <u>5</u> (time in years)

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   15,000  (P)          750.00          Reminder: 5% = 0.05
 x    .05  (R)        x      5  (T)
   75000               3750.00
   00000
   0750.00
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So the amount of interest is <u>$3,750.</u>

Tax & Tip:

Tax is an amount of money <u>added</u> to an item for the purpose of making money. <u>Tax</u> is calculated by a certain percentage rate on purchased items. The percent of tax must be changed to a <u>decimal</u> to multiply the bill amount with the tax rate.

Example: Mrs. Urquhart took her children to Disney World for summer vacation, and purchased each daughter a souvenir T-shirt. Her total bill was $48.00 plus 8% sales tax. How much was Mrs. Urquhart total including tax?

Bill amount <u>$48.00</u> x <u>0.08</u> (8% tax changed to a decimal) =

```
    48
  x .08
   384
   000
   3.84
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So the amount of tax is <u>$3.84</u>.   Total bill = $48.00 + $3.84 (tax) = <u>$51.84</u>

<u>Tip</u> is an **added** amount of money, calculated by a <u>percentage</u>. The amount of the bill is <u>multiplied</u> by the rate of tip, and then <u>added</u> onto the bill total. The <u>percent</u> of tip must be <u>changed to a decimal</u> to multiply the bill amount with the tip rate.

Example: Mr. Kelly's bill at Olive Garden totaled $23.84. He gave the waiter a 15% tip. What is the tip amount? How much money did Mr. Kelly leave on the table including tip?

Amount <u>$23.84</u> x <u>0.15</u> (15% changed to a decimal) = 3.576 (approx. $3.58)
So the tip amount is <u>$3.58</u>.

Amount $23.84 + $3.58 (tip) = <u>$27.42</u>
So the amount of money that Mr. Kelly left on the table was <u>$27.42.</u>

<u>Discount:</u>

A <u>discount</u> is an amount of money <u>subtracted</u> from the original price of an item. Discounts come in the form of a certain <u>percentage</u> off of an item, such as <u>25%</u> off. The <u>percent</u> of discount must be <u>changed to a decimal</u> to multiply the original price with the discount rate.

Example: Sewkumar went back-to-school shopping and spotted a black hoodie that he just had to have. The hoodie cost $54.00, but it was on sale for 40% off. His mom said that if the hoodie cost less than $40.00 he could buy it. Did Sewkumar get the hoodie? Why or why not?

Amount of hoodie <u>$54.00</u> x <u>0.40</u> (40% changed to a decimal) =
$$\begin{array}{r} 54 \\ \times\ .4 \\ \hline 21.6 \end{array}$$
21.6 = $21.60

So the discount amount is <u>$21.60.</u>

Amount $54.00 - <u>$21.60</u> (discount) = <u>$32.40</u>
So the hoodie would cost Sewkumar <u>$32.40.</u>
(Yes or No) he (was or was not) able to purchase the hoodie.

$$\begin{array}{r} 54.00 \\ -\ 21.60 \\ \hline 32.40 \end{array}$$

SOL 7.4b Interest Practice

Directions: You must show all of your work for full credit! Space has been provided on this sheet for you to work them out.

1. Matthew plans to go back to college to finish his degree. A local bank will lend him $8,000 for 6 years at the interest rate of 8% per year to pay for his first semester. How much interest will the bank charge?

2. DeShay borrowed $400 from the bank for 1 year. The bank charges 14% interest per year. How much interest did the bank charge?

3. Mrs. Zollicoffer's bank pays $5\frac{1}{4}$% interest. She has $1,000 in the bank. How much interest would she receive in one year?

4. Mr. Bell's bank pays 5% interest annually. He has $8,500 in the bank. How much interest would he receive in 6 months?

5. Mr. Rooks' bank pays $4\frac{1}{2}$% interest per year. He has $17,000 in the bank. How much interest would he receive in 3 years?

6. Anita put $3,000 in a savings account. The account earns an annual interest rate of 3.5%. How much interest will Anita earn after her money has been in the account for one year?

7. Chris put $1,500 in a savings account at an annual rate of 5%. If Chris does not deposit or withdraw any money, what is the amount of interest Chris will earn the first year her money is in the savings account?

ANSWERS

1. $3,840.00
2. $56.00
3. $52.50
4. $212.50
5. $2,295.00
6. $305.00
7. $75.00

Directions: Solve each problem carefully. NO CALCULATOR! You must show ALL of your work for full credit!!

Solve: Formula I = PRT

1) Gill borrows $1060 at 21% interest per year. When Gill pays the loan back 2 years later, how much interest does Gill pay?

2) Cathy borrows $2340 at 30% interest per year. When Cathy pays the loan back 10 years later, what is the total amount that Cathy ends up repaying?

3) Val borrows $3210 at 0.5% interest per year. When Val pays the loan back 7 years later, how much interest does Val pay?

4) Fred borrows $1120 at 1.9% interest per month. When Fred pays the loan back 3 years later, how much interest does Fred pay?

5) Paul borrows $570 at 7% interest per month. When Paul pays the loan back 7 years later, how much interest does Paul pay?

6) Bill borrows $110 at 4% interest per month. When Bill pays the loan back 5 years later, what is the total amount that Bill ends up repaying?

SOL 7.4b – Tax & Tip Practice

Directions: You must show all of your work for full credit! Space has been provided on this sheet for you to work your problems out.

1. John wants to leave a 15% tip for his meal. If the meal costs $24.40, how much is the bill including the tip?

2. The cost of Matt and Natalie's dinner was $23.25. They want to leave a 18% tip. What is the amount of the tip they are going to leave?

3. Bob wants to leave a 12% tip for his meal. If the meal costs $36.55, how much is the bill including the tip?

4. Maxine wants to leave a 17% tip for her meal. If the meal costs $44.60, how much will she spend in all?

5. What is the total cost of a $16.00 hat, if the sales tax rate is 8%?

6. Sales tax on merchandise is $4\frac{1}{2}$%. Percy is buying a pair of jeans for $35.00. What is the total cost including tax?

7. Sales tax on merchandise is 5%. Brenda is buying a shirt that costs $22. What is the total cost of the shirt, including sales tax?

8. What is the total cost of an $86.00 winter jacket, if the sales tax rate is 7.5%?

ANSWERS

1. $28.06
2. $4.19
3. $40.94
4. $52.18
5. $17.28
6. $36.58
7. $23.10
8. $92.45