Lesson 1 Interest (one year) PRE-ALGEBRA

Interest is the money paid for the use of money.

The amount of interest paid is determined by:

(1) the **principal,** the amount of money borrowed or deposited,

(2) the **rate** of interest, usually given as a percent, and

(3) the **time,** expressed in years.

When deposited in a savings account, what is the interest on $300 at 5% for 1 year?

$$interest = principal \times rate \times time$$

$$i = \quad 300 \quad \times 0.05 \times \quad 1$$
$$= \qquad\qquad 15.00 \quad \times \quad 1$$
$$= \qquad\qquad 15.00 \text{ or } 15$$

The interest is $_____.

Complete the following.

	Principal	Rate	Time	Interest
1.	$200	5%	1 year	
2.	$300	4%	1 year	
3.	$400	5%	1 year	
4.	$75	6%	1 year	
5.	$30	7%	1 year	
6.	$78	4%	1 year	
7.	$830	4%	1 year	
8.	$925	6%	1 year	
9.	$42.80	5%	1 year	
10.	$513.40	5%	1 year	
11.	$64.50	8%	1 year	
12.	$1320.20	5%	1 year	

Lesson 1 Problem Solving PRE-ALGEBRA

Solve each problem.

1. Mr. Murray borrowed $450 for 1 year. He is to pay interest at the rate of 9% yearly. How much interest will he pay?

   He will pay $_____ interest.

2. Maggie put $65 in a savings account. The account will earn 6% interest yearly. How much interest will the account earn in 1 year?

   It will earn $_____ interest.

3. Zachary has a $25 bond that pays interest at the rate of 5% a year. How much interest will the bond pay after 1 year?

   The bond will pay $_____ interest.

4. The Merkels borrowed $675 for 1 year. The interest rate is 14% a year. How much interest will the Merkels pay?

   They will pay $_____ interest.

5. Mrs. Trumpet had $2400 in her savings account at the beginning of the year. Her account pays 5% interest yearly. How much interest will she receive in 1 year?

   She will receive $_____ in 1 year.

6. Assume the interest rate is 12% a year. How much interest would a person have to pay if he borrowed $420.75 for 1 year?

   He would have to pay $_____ interest.

7. Austin has $450 in an account that pays interest at 6% a year. Jared has $350 in an account that pays interest at 8% a year. Who will receive the greater amount of interest in 1 year? How much greater?

   _____ will receive the greater amount.

   It will be $_____ greater.

1.	
2.	**3.**
4.	**5.**
6.	**7.**

Lesson 2 Interest (more than one year) PRE-ALGEBRA

You borrow $2000 for a period of 3 years. You pay interest at the rate of $9\frac{3}{4}\%$ each year.

How much interest will you pay in the 3-year period?	How much is needed to repay the loan?
$i = p \times r \times t$	principal → $2000
$\quad = 2000 \times 0.0975 \times 3$	interest → +585
$\quad = 585$	total amount → $2585
You will pay $\underline{\ \ 585\ \ }$ interest.	You need $\underline{\ \ 2585\ \ }$ to repay the loan.

Complete the following.

	Principal	Rate	Time	Interest
1.	$300	10%	3 years	
2.	$700	8%	2 years	
3.	$950	$12\frac{1}{2}\%$	4 years	
4.	$1480	$9\frac{1}{4}\%$	2 years	
5.	$1675	15%	3 years	

	Principal	Rate	Time	Interest	Total amount
6.	$500	12%	2 years		
7.	$600	14%	3 years		
8.	$850	$9\frac{1}{2}\%$	2 years		
9.	$2500	$12\frac{3}{4}\%$	4 years		
10.	$3890	10%	3 years		

Lesson 2 Problem Solving PRE-ALGEBRA

Solve each problem.

1. John borrowed $750 for 2 years. The interest rate is 9% a year. How much interest will he pay?

   He will pay $_____ interest.

2. The principal of a loan is $2500. The yearly interest rate is 8%. How much interest would be paid if the loan were for 3 years? How much would be needed to repay the loan?

   The amount of interest is $_____.

   The amount to repay is $_____.

3. Alicia has a loan in the amount of $500. The interest rate is 10% a year. The loan is for 2 years. How much interest will she pay?

   She will pay $_____ interest.

4. The Glazeskis borrowed $3000 for 2 years. The yearly interest rate is 9%. How much interest will they pay?

   They will pay $_____ interest.

5. Mrs. Henry has $5500 in a savings account that pays $8\frac{1}{4}$% yearly interest. If the interest is paid to her at the end of each year, how much will she receive in 3 years?

   She will receive $_____interest.

6. Suppose the interest rate in problem **5** is $8\frac{1}{2}$%. How much interest would Mrs. Henry receive in 3 years?

   She would receive $_____interest.

7. Colleen borrowed $4050 for 3 years at a yearly interest rate of 11%. How much will be needed to repay the loan?

   The amount to repay is $_____.

1.	
2.	**3.**
4.	**5.**
6.	**7.**

Lesson 3 Interest (more than one year) PRE-ALGEBRA

You borrow $1500 for a period of $2\frac{1}{2}$ years at a rate of 15% each year.

How much interest will you pay in the $2\frac{1}{2}$-year period?	How much is needed to repay the loan?
$i = p \times r \times t$ $\quad = 1500 \times 0.15 \times 2.5$ $\quad = 562.5$ You will pay $\$\underline{\;\;562.50\;\;}$ interest.	principal $\rightarrow$ $\quad$ $1500 interest $\rightarrow$ $\quad$ $\underline{+562.50}$ total amount $\rightarrow$ $2062.50 You need $\$\underline{\;2062.50\;}$ to repay the loan.

Complete the following.

	Principal	Rate	Time	Interest
1.	$500	12%	2 years	
2.	$450	8%	$2\frac{1}{2}$ years	
3.	$392	15%	$1\frac{1}{4}$ years	
4.	$1870	$10\frac{1}{2}$%	3 years	
5.	$2000	$11\frac{1}{4}$%	$2\frac{3}{4}$ years	

	Principal	Rate	Time	Interest	Total amount
6.	$700	10%	$1\frac{1}{2}$ years		
7.	$85	12%	$\frac{1}{2}$ year		
8.	$1000	$9\frac{1}{2}$%	$\frac{3}{4}$ year		
9.	$1875	14%	$3\frac{1}{2}$ years		
10.	$1400	$9\frac{3}{4}$%	$2\frac{1}{2}$ years		

Lesson 3 Problem Solving PRE-ALGEBRA

Solve each problem.

1. Mr. Rogers borrowed $800 for a period of 2 years. He is to pay interest at the rate of 9% a year. How much interest will he have to pay?

He will have to pay $_____ interest.

2. Roger had $445 in a savings account that paid interest at the rate of 6% a year. How much interest did Roger receive in $1\frac{1}{2}$ years?

Roger received $_____ interest.

3. Ms. Lazar deposited $160 in an account that pays $6\frac{1}{2}\%$ interest each year. How much interest would she have after $2\frac{1}{2}$ years?

She would have $_____ interest.

4. Mr. Wrinkles borrowed $750 for $\frac{1}{2}$ year. How much interest will he be charged if the interest rate is 8% a year? What is the total amount needed to repay the loan?

He will be charged $_____ interest.

The total amount needed is $_____.

5. The Mims borrowed $3000 for $2\frac{1}{2}$ years at $12\frac{3}{4}\%$ yearly interest. What is the total amount needed to repay the loan?

The total amount needed is $_____.

6. Tyler has $360 in an account that pays 5% interest a year. Aaron has $290 in an account that pays 6% interest a year. Who will receive the greater amount of interest after $1\frac{1}{2}$ years? How much greater?

_____ will receive the greater amount.

He will receive $_____ more.

1.	
2.	**3.**
4.	**5.**
6.	

Lesson 4 Interest (less than one year) PRE-ALGEBRA

To estimate interest for a certain number of days, you can consider a year to be 360 days. Thus, 90 days is $\frac{90}{360}$ or $\frac{1}{4}$ year, 180 days is $\frac{180}{360}$ or $\frac{1}{2}$ year, and so on.

About how much interest would Mrs. Willis pay for a 30-day loan of $600 at 8%?

$$i = 600 \times 0.08 \times \frac{30}{360}$$
$$= 48 \times \frac{1}{12}$$
$$= 4$$

She would pay $____4____ interest.

About how much interest would Mrs. Willis pay for a 120-day loan of $600 at 8%?

$$i = 600 \times 0.08 \times \frac{120}{360}$$
$$= 48 \times \frac{1}{2}$$
$$= 16$$

She would pay $_____ interest.

Estimate the interest for each of the following.

	Principal	Rate	Time	Interest
1.	$200	12%	30 days	
2.	$240	10%	60 days	
3.	$150	8%	90 days	
4.	$300	15%	120 days	
5.	$420	11%	180 days	
6.	$900	13%	270 days	
7.	$800	15%	30 days	
8.	$900	12%	180 days	
9.	$540	10%	80 days	
10.	$1900	15%	150 days	

Lesson 4 Problem Solving PRE-ALGEBRA

Solve each problem. Use a year of 360 days.

1. Interest on a 90-day loan of $400 was charged at the rate of 15% a year. How much interest was charged?	**1.**	**2.**	

1. Interest on a 90-day loan of $400 was charged at the rate of 15% a year. How much interest was charged?

The interest charged was $_____.

2. Suppose $350 is invested for 60 days at an annual (yearly) rate of 6%. How much interest will be earned?

$_____ interest will be earned.

3. The Triangle Company borrowed $1900 for 180 days at 12% annual interest. How much interest will they have to pay? What will be the total amount needed to repay the loan?

The interest will be $_____.

The total amount will be $_____.

4. Mr. Davis borrowed $600 for 60 days at 9% annual interest. However, he was able to repay the loan in 30 days. How much interest was he able to save by doing this?

He was able to save $_____ interest.

5. Interest on a 120-day loan of $27 000 is charged at an annual rate of 10%. How much interest is charged?

The interest is $_____.

6. An automobile dealer borrowed $36 000 from the bank at 9% annual interest. How much interest will be charged for 270 days? If the loan is paid in 270 days, what will be the total amount needed to repay the loan?

He will be charged $_____ interest.

The total amount will be $_____.

1.	**2.**
3.	**4.**
5.	**6.**

CHAPTER 7   PRACTICE TEST
Interest

Assume each principal has been loaned as indicated. Find the interest for each loan. Then find the total amount needed to repay each loan.

	Principal	Rate	Time	Interest	Total amount
1.	$500	9%	1 year		
2.	$400	11%	1 year		
3.	$600	15%	2 years		
4.	$750	8%	3 years		
5.	$3000	$9\frac{1}{2}\%$	2 years		

Complete the following.

	Principal	Rate	Time	Interest
6.	$300	15%	$1\frac{1}{2}$ years	
7.	$500	11%	$2\frac{1}{4}$ years	
8.	$400	12%	$2\frac{3}{4}$ years	
9.	$650	14%	180 days	
10.	$700	$8\frac{1}{4}\%$	2 years	
11.	$800	10%	90 days	
12.	$1000	$11\frac{1}{2}\%$	$\frac{1}{2}$ year	
13.	$880	$7\frac{3}{4}\%$	2 years	
14.	$1550	16%	270 days	
15.	$1600	14%	4 years	

CHAPTER 8 PRETEST
Metric Measurement

Complete the following.

	a	*b*
1.	9 cm = _____ mm	1 m = _____ mm
2.	25 m = _____ cm	1 km = _____ m
3.	30 mm = _____ cm	3500 mm = _____ m
4.	2.5 km = _____ m	46.87 m = _____ mm
5.	49 cm = _____ m	250 m = _____ km
6.	4 L = _____ mL	1.7 kL = _____ L
7.	500 mL = _____ L	2480 L = _____ kL
8.	10.8 g = _____ mg	800 mg = _____ g
9.	100 kg = _____ g	260.5 g = _____ kg
10.	4800 kg = _____ t	0.9 t = _____ kg

Solve each problem.

11. Robin needs 5 m of ribbon. The ribbon comes in rolls of 250 cm each. How many rolls will she have to buy?

She will have to buy _____ rolls.

11.

12. Twelve servings of the same size were made from a box of cereal of mass 336 g. How much cereal was in each serving?

There were _____ g in each serving.

12.

13. Mrs. Cardenal's car can go 11.3 km on 1 L of fuel. The capacity of the car's fuel tank is 80 L. How far can she drive on a full tank of fuel?

She can drive _____ km.

13.