**F.1 Homework Percent and Simple Interest**

**1) Express the fraction as a percent.**

$\frac{5}{8} $ $\frac{7}{8}$ $\frac{5}{6}$ $\frac{7}{10}$

2) **Write the decimal as a percent.**

0.557 3.4 0.00583 29

3) **Express the percent as a decimal**

49.3% 670% $\frac{8}{11}\%$ 2%

4) A student took out a simple interest loan for $14,000 for five years at a rate of 7.5% to pay for college tuition. Find the interest of the loan.

5) Anna invested $5000 at a simple interest rate of 8.5% for 9 months. How much interest will she owe?

6) A man borrowed $12,600 at a simple interest rate of 9% for 60 days. How much interest will he pay, if we assume that there are 365 days in a year?

7) Jason borrowed $1400 from his parents, and promised to pay his parents $600 in interest in 2 years. What simple interest rate, to the nearest tenth of a percent, will he pay?

8) A loan for $600 is compounded annually at a rate of 7.2%. If the length of the loan is 8 years, how much will it cost to pay back the loan? Round to two decimal places.

9) You deposit $2800 in a savings account that has a rate of 7%. The interest is compounded annually.

 a) How much money will you have after three years?

 b) Find the interest after three years.

**F.2 Homework Compound Interest**

1) $9000 is invested in an account that earns 5.5% interest, compounded quarterly.

 a) Find the total amount of money in the account after 4 years.

 b) Find the amount of interest earned.

2) Tara and Stephie each have $2000 to invest. Tara invests her money in an account that earns 6% interest, compounded monthly, for 3 years. Stephie invests her money in an account that earns 5.5% interest, compounded annually, for 4 years. Find the *difference* in the final amounts for each investment, and also specify whose investment grew to a larger amount.

3) An investment of $25,000 is compounded daily at a rate of 5.5% for 20 years.

 a) How much money will the investment be worth after 20 years?

 b) Find the amount of interest earned.

**For #4 – 5:** Tricia borrows $8000 from a lender who charges 5.25% compounded continuously for 3 years.

4) How much will Tricia pay in total after 3 years?

5) How much interest will Tricia pay over 3 years?

6) You borrow $2000 from a friend who charges 10% interest for 2 years, compounded quarterly. Find the amount of **interest** that you will pay over the 2 years.

7) You decide to invest $6000 for 10 years and you have a choice between two accounts. The first pays 7% per year, compounded monthly. The second pays 6.35% per year, compounded continuously. Which is the better investment? How much more is earned?

8) Beatriz invests $1400 in an account that earns 4% interest, compounded continuously. Find the total value of the investment after five years. Also, how much interest is earned?

9) How much money should be deposited in an account today that earns 8.4% compounded daily so that it will accumulate to $6,000 in five years?

10) Bill would like to save $50,000 so that he can make a down payment on a house in ten years. How much money should he invest now in an account that earns 6% compounded monthly?

**F.3 Homework Annuities**

1) At age 25, to save for retirement, you decide to deposit $600 at the end of each year in an annuity that pays

 5.5% compounded annually.

 a) Find the value of the annuity after 40 years.

 b) Find the interest earned over the 40 years.

**For #2 – 4:** Just like in #1, your friend starts saving for retirement and wants to put $600 each year into an annuity. But instead of making one deposit each year, your friend decides to deposit $50 each month. The annuity pays 5.5% compounded monthly.

2) Find the value of the annuity after 40 years.

3) Find the interest earned over the 40 years.

4) Compare your friend’s results with your results from #1. Whose annuity is worth more, and what is the difference in these amounts?

5) In order to offer scholarship funds to children of employees, a company invests $10,000 quarterly in an annuity that pays 10.5% compounded quarterly.

 a) How much will the company have in scholarship funds at the end of ten years?

 b) How much interest will be earned at the end of ten years?

**For #6 – 11:** Marla, Jody, Loni, Ardis, and Cheri each want to invest $5000 for four years to save for a trip to Europe. **Find the amount that each person will have earned at the end of four years, using the information below.**

6) Marla makes a one-time investment of $5000 in a savings account with a 6% simple interest rate.

7) Jody deposits $1250 at the end of each year for four years in an annuity earning 6% interest, compounded annually.

8) Loni deposits $625 every six months for four years in an annuity earning 6% interest, compounded semi-annually.

9) Ardis deposits $312.50 every three months for four years in an annuity earning 6% interest, compounded quarterly.

10) Cheri deposits $104.17 at the end of every month for four years in an annuity earning 6% interest.

11) Whose plan is worth the most? How much interest did that person accrue?

**For #12 – 13:** Kierra receives an inheritance of $40,000, and she decides to invest it. She considers the two options below. Find the value of each investment after 10 years.

12) Deposit the full $40,000 in a savings account earning 6.5% interest, compounded quarterly, for 10 years.

13) Deposit $1000 at the end of every three months in an annuity earning 8.5% interest, compounded quarterly.

**F.4 Homework Installment Buying**

**For #1 – 3:**  The cost of an SUV is $27,000. Bryan finances this by paying $5000 down and then $410 per month for 60 months.

1) Determine the amount financed.

2) Determine the total installment price.

3) Find the finance charge.

**For #4 – 6:** Laura purchases a computer that costs $2450, and she pays $550 down. After that, she will pay $94.50 per month for 24 months.

4) Determine the amount financed.

5) Determine the total installment price.

6) Find the finance charge.

**For #7 – 9:** Garrett buys a new washer-dryer for $1100. He pays $100 down and $110 per month for 12 months.

7) Determine the amount financed.

8) Determine the total installment price.

9) Find the finance charge.

**For #10 – 12:** The cost of a used car is $5675. This is financed by paying $1223 down and $125 per month for 48 months.

10) Determine the amount financed.

11) Determine the total installment price.

12) Find the finance charge.

**For #13 – 23:**  Tracy gets a new credit card that uses the unpaid balance method from the last day of the previous month, with an annual percentage rate of 15% (so the monthly percentage rate is 1.25%). On the last day of August, her balance was $2000 dollars. Her minimum payment is $50.

13) Find the amount of interest charged in September.

14) Find her new balance for September, including the interest.

15) In September, Tracy makes the minimum payment. Find her ending balance for the last day of September.

16) Find the amount of interest charged in October.

17) Find her new balance for October, including the interest.

18) In October, Tracy makes the minimum payment. Find her ending balance for the last day of October.

19) Find the amount of interest charged in November.

20) Find her new balance for November, including the interest.

21) In November, Tracy makes the minimum payment. Find her ending balance for the last day of November.

22) How much, in total payments, did Tracy pay from September through November?

23) How much did Tracy pay off on her credit card balance from September through November?

**F.5 Homework The Cost of Home Ownership**

**For #1 – 5:** The price of a home is $290,000. The bank requires a 20% down payment. The cost of the home is financed with a 30-year fixed mortgage at 7%.

1) Find the required down payment.

2) Find the amount of the mortgage.

3) Find the monthly payment (excluding escrowed taxes and insurance.) Round to 2 decimal places.

4) Find the total amount paid by the owner over 30 years (not including the down payment).

5) Find the total amount of interest paid over 30 years.

**For #6 – 10:** The price of a condominium is $180,000. The bank requires a 5% down payment, and this is financed with a 30-year fixed mortgage at 8%.

6) Find the required down payment.

7) Find the amount of the mortgage.

8) Find the monthly payment (excluding escrowed taxes and insurance.) Round to 2 decimal places.

9) Find the total amount paid by the owner over 30 years (not including the down payment).

10) Find the total amount of interest paid over 30 years.

**For #11 – 15:** The price of a small home is $160,000 with a 15% down payment. The buyer is offered two mortgage options: 15-year fixed at 8% or 30-year fixed at 7%.

11) Calculate the monthly payment for the 15-year mortgage. Round to 2 decimal places.

12) Calculate the monthly payment for the 30-year mortgage. Round to 2 decimal places.

13) Find the total amount of payments for the 15-year mortgage (not including the down payment). Also, find the interest paid over 15 years.

14) Find the total amount of payments for the 30-year mortgage (not including the down payment). Also, find the interest paid over 30 years.

15) Find the amount of **interest** saved with the 15-year mortgage compared to the 30-year mortgage.