Name: _____ Date: _____

BLM 8–4

Section 8.2 Compound Interest

1. Substitute the values of each investment into the formula $A = P(1+i)^n$. Use a calculator to evaluate.
- **a)** \$400 at 6% per year, compounded annually, for 5 years
- **b)** \$1800 at 8.4% per year, compounded semi-annually, for $7\frac{1}{2}$ years
- **c)** \$2150 at 1.2% per year, compounded monthly, for 19 months
- **d)** \$10 800 at 8.4% per year, compounded quarterly, for 14 years

2. Renata invested \$15 000 at 6% per year, compounded monthly, for $3\frac{1}{2}$ years.

Calculate the amount of interest she earned on her investment.

3. Jonathan borrows \$9000 from a financial institution for the purchase of a used car. The terms of the loan require Jonathan to pay interest at 4% per year, compounded semi-annually, and repay the total amount at the end of 2 years.
- **a)** How much does Jonathan need, to repay at the end of 2 years?
- **b)** How much interest does this repayment include?

4. Find the value of a \$4600 investment at 8% per year for 4 years if interest is compounded
- **a)** annually
- **b)** semi-annually
- **c)** quarterly
- **d)** monthly
- **e)** weekly

5. Refer to question 4. What property of compound interest is illustrated in the answers?

6. When Marta was 5 years old, her parents invested \$12 000 for her in a plan that earns 6% per year, compounded semi-annually. How much will the investment be worth when Marta is
- **a)** 12 years old?
- **b)** 18 years old?

7. A \$950 investment is made at 10% per year, compounded quarterly. How much interest will the investment make in the
- **a)** 5th year?
- **b)** 10th year?

8. Refer to question 7. Explain the difference in the answers for the two parts.

9. Minh needs a loan of \$7000 for 6 years.
- **a)** Which plan will require him to pay the least amount of interest?

Plan A: 10% per year, compounded semi-annually

Plan B: 8.1% per year, compounded quarterly
- **b)** Calculate the difference in the amount of interest between the two plans.

10. Ray invested \$25 000 in a plan that paid 2% per year, compounded quarterly, for 3 years. At the end of the 3 years, he re-invested the total amount earned in the previous plan into a new investment that paid 5% per year, compounded semi-annually, for another 2 years. At the end of the 2 years, he re-invested the total amount into a third plan that paid 6% per year, compounded monthly, for 3 years.
- **a)** How much did he have at the end of the first investment?
- **b)** How much did he have at the end of the second investment?
- **c)** How much did he have at the end of the third investment?
- **d)** How much interest did he earn in total?