

Prerequisite Skills

Proportional Thinking

1. Depositing \$1800 in one year means depositing how much
 - a) per month?
 - b) per week?
 - c) per day?
2. Earning \$3000 per month means earning how much
 - a) in 1 year?
 - b) in 5 years?
 - c) in 10 years?
 - d) in 30 years?

Exponents and Exponential Functions

3. Without using a calculator, determine whether each power will give a value greater than, less than, or equal to 1.
 - a) 0.99^2
 - b) 0.15^{-8}
 - c) $\left(\frac{4}{5}\right)^{-2}$
 - d) $\left(\frac{24}{73}\right)^3$
 - e) 1.00675^0
 - f) 0.1^{-1}
4. Determine the value of each power in question 3. Round your answers to two decimal places.
5. Consider the exponential functions $f(x) = 0.4^x$ and $g(x) = 4^x$.
 - a) Make a table of values and sketch a graph of each function.
 - b) Which function, $f(x)$ or $g(x)$, has a greater value when
 - i) $x = 10$?
 - ii) $x = -10$?
 - iii) $x = 0.1$?
 - iv) $x = -0.1$?
6. Consider the functions $f(x) = 100 + 5x$ and $g(x) = 100(1.05)^x$.
 - a) Sketch a graph of each function.
 - b) For which values of x does $f(x) = g(x)$?
 - c) Predict which function will have the greater value when $x = -20$. Justify your answer.
 - d) Use a graphing calculator to check your answers to part b) and part c).

Simple and Compound Interest

7. Determine the simple interest earned in each situation. Round your answers to two decimal places.
 - a) A \$5000 GIC earns 3.6% interest per year, for 5 years.
 - b) A \$1500 deposit into a savings account earns 1.25% interest per year, for 120 days.
 - c) An \$8000 term deposit earns 2.65% annual interest for 30 months.
 - d) A \$7500 investment earns 3.9% interest per year, for 15 months.
8. Determine i , the interest rate per compounding period, and n , the number of compounding periods. Round your answers to six decimal places.
 - a) \$750 invested at 3% annual interest, compounded monthly for 4 years.
 - b) \$300 invested at 0.75% interest per year, compounded daily for 2 years.
 - c) \$4000 invested at 4.5% annual interest, compound weekly for 1 year.
 - d) \$1800 invested at 2.15% interest per year, compounded quarterly for 3 years.
9. Use the compound interest formula to determine the future value for each part of question 8. Round your answers to two decimal places.
10. Use the method of your choice to determine the present value of each amount. Round your answers to two decimal places.
 - a) \$1400 in 6 months at 2.4% per year, compounded monthly
 - b) \$21 000 in 2 years at 4.2% per year, compounded semi-annually