

PICTON HIGH SCHOOL

Creating Opportunities Achieving Success



Year 9 Mathematics Assessment Task 3 2024

Due Date: Term 3 Week 7	Assessment Name: Investigative Assessment
Graded: A-E	

TASK DESCRIPTION:

You are required to complete a research task that includes two parts:

- Part 1: Simple and Compound Interest
- Part 2: Financial Mathematics

You have two weeks from the date this task is assigned to submit your work. To achieve full marks, you must show complete solutions for each step of the process, even if you use a calculator.

SYLLABUS OUTCOMES TO BE ASSESSED:

A student:

- | | |
|--------------|---|
| MAO-WM-01 | develops understanding and fluency in mathematics through exploring and connecting mathematical concepts, choosing and applying mathematical techniques to solve problems, and communicating their thinking and reasoning coherently and clearly. |
| MA5-MAG-C-01 | solves measurement problems by using scientific notation to represent numbers and rounding to a given number of significant figures. |
| MA5-EQU-C-01 | solves linear equations of up to 3 steps, limited to one algebraic fraction. |
| MA5-IND-C-01 | simplifies algebraic expressions involving positive integer and zero indices, and establishes the meaning of negative indices for numerical bases. |
| MA5-IND-P-01 | applies the index laws to operate with algebraic expressions involving negative integer indices (Path: Adv). |
| MA5-IND-P-02 | describes and performs operations with surds and fractional indices (Path: Adv). |
| MA5-FIN-C-01 | solves financial problems involving simple interest, earning money and spending money. |

DIRECTIVES TO BE ASSESSED:

- Develop:** To elaborate, become more complex or intricate; add detail to show in-depth understanding of mathematical concepts.
- Calculate:** To find a mathematical solution for a question, and carry out the process.
- Solve:** To manipulate something for a particular purpose to find the answer for mathematical problems.

ASSESSMENT CRITERIA AND STUDENT CHECKLIST

Have you:

- Put the due date in your calendar?
- Have a NESA-approved scientific calculator, pens, rulers, pencils and erasers?
- Asked your teacher for clarification or assistance on any problems?
- Shown all relevant calculations and mathematical working out where required
- Included all parts of the assessment when submitting.

PART 1: Simple Interest

1. Choose the correct answer. What is the formula for calculating simple interest? (1 mark)

- A) Interest = Principal x Rate x Time
- B) Interest = Principal + Rate + Time
- C) Interest = Principal / Rate x Time
- D) Interest = Principal - Rate x Time

2. We use simple interest for short-term loans because it makes it easier to quickly calculate how much extra you'll pay based on the amount borrowed and the time. What is an example of a situation where simple interest is often used (choose one answer)?

(1 mark)

- A) Investing in a stock market.
- B) Saving money in a high-yield savings account.
- C) Taking out a short-term loan for a car.
- D) Investing in a long-term retirement fund.

3. Describe the three components needed to calculate simple interest.

(3 marks)

1.
2.
3.

4. Fill out the following table.

(3 marks)

Interest	Principal	Rate	Time (Years)
\$3,600	\$6,000	5%	
	\$10,000	10%	3
\$36,000		5%	9
\$9,000	\$100,000		18 months

PART 2: Financial Mathematics

During this assessment task, it is assumed that you have completed your HSC and further job-related tertiary studies (TAFE/University). You have taken a student-loan to complete your tertiary studies.

It has been assumed that you have deferred all payments to the end of the course.

You are currently at the stage in your life where you are ready to buy a house. It is assumed you will need a mortgage.

Question 1: Your Debt

Find a job you would like to do that requires a diploma, bachelor's degree, master's degree or doctorate. You will need to use the internet; look at websites like www.seek.com.au to see what employers want.

For example, to be a paramedic, you would need a bachelor's degree course in paramedic science.

Pick a university of your choice in NSW and look for the relevant course. Find the fees for the course to complete the following sections of the question.

For example, if you would like to study at UOW: Go to <https://www.uow.edu.au/study/> and navigate to "BROWSE COURSES". Pick a course of your choice and click on FEES.

State your choices below.

(3 marks)

Chosen Job after high school/TAFE/University:

Salary for chosen job:

Training/Courses needed to get the job:

Chosen Course:

Duration of Course

Cost per year:

Question 2: House Mortgage

Go to www.realestate.com.au and find a house that you would like to buy. The bank is willing to let you buy the house with a 10% deposit.

Cost of house:

a) Calculate the amount of deposit required. (1 mark)

b) Calculate the amount remaining after paying the deposit. (1 mark)

