



SAMPLE ASSESSMENT TASKS

MATHEMATICS
FOUNDATION YEAR 12

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Sample assessment task

Mathematics – Foundation Year 12

Task 3 – Unit 3

Assessment type: Response – Skills test

Conditions

Time for the task: 30 minutes

In class, calculator permitted, spreadsheet required

Marks: 17 marks

Task weighting: 5% of the school mark for this pair of units

1. The government taxes you at a rate of 19% for every dollar over \$18 200 that you earn in a job. Imagine you have a job and you earned \$24 200 last year.

(a) How much money must you pay tax on? (1 mark)

(b) Calculate the amount of tax you must pay. (2 marks)

(c) Write down all the buttons you pressed on your calculator to get your answer to part (b) in the grid below. (1 mark)

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2. Listed below are some amounts of money from a person's weekly budget.
- (a) Identify each amount as income or expense. (Write I or E next to each.) (2 marks)
- | | | | | | |
|----------|-------|-------|--------------|------|-------|
| Food | \$80 | _____ | Clothes | \$30 | _____ |
| Bus fare | \$25 | _____ | Pocket money | \$20 | _____ |
| Pay | \$221 | _____ | Phone | \$15 | _____ |
| Movies | \$12 | _____ | | | |
- (b) Construct a spreadsheet to show income and expenses above, and how much money could be saved at the end of each week. Print off the spreadsheet and submit with this test. (5 marks)
- (c) How much money could be saved each week? (1 mark)
3. A first-year apprentice hairdresser is paid \$10.80 per hour on weekdays. The penalty rate for working on Saturday is an increase of 33% per hour for normal hours. (Normal hours are between 7 am and 6 pm.)
- (a) What is the penalty rate for an apprentice who works on a Saturday during normal hours? (2 marks)
- (b) Calculate how much the apprentice earns for the week, if he works 16 hours from Monday to Friday and seven hours on Saturday. (3 marks)

Marking key for sample assessment task 4 – Unit 3

1. (a) How much money must you pay tax on?

Solution	
\$24 200 - \$18 200 = \$6 000	
Specific behaviours	Marks
Calculates difference	1
Total	1

- (b) Calculate the amount of tax you must pay?

Solution	
\$6 000 x 19% = \$1 140	
Specific behaviours	Marks
Calculates a percentage amount	1
Applies percentage calculation to taxable income	1
Total	2

- (c) Write down all of the buttons you pressed on your calculator to get your answer to part (b) in the grid below.

Solution											
6	0	0	0	X	1	9	%	=			
Note: some calculators require = to be pressed and some do not											
Specific behaviours										Marks	
Uses the calculator efficiently to work out a percentage of a quantity										1	
Total										1	

2. (a) Identify each amount as income or expense. (Write I or E next to each.)

Solution					
Food	\$80	E	Clothes	\$30	E
Bus fare	\$25	E	Pocket money	\$20	I
Pay	\$221	I	Phone	\$15	E
Movies	\$12	E			
Specific behaviours					Marks
Distinguishes between income and expense					1
Identifies all income and expenses					1
Total					2

- (b) Construct a spreadsheet to show income and expenses and how much money could be saved at the end of each week.

Solution			
Item		Income (\$)	Expense (\$)
Food			80
Bus fare			25
Pay		221	
Movies			12
Clothes			30
Pocket money		20	
Phone			15
Total		241	162
Savings	\$79		

Item		Income (\$)	Expense (\$)
Food			80
Bus fare			25
Pay		221	
Movies			12
Clothes			30
Pocket money		20	
Phone			15
Total		=SUM(C3:C9)	=SUM(D3:D9)
Savings	=C11-D11		

Specific behaviours	Marks
Income shown in one column	1
Expenses shown in one column	1
Savings shown	1
Sum formula used to calculate the total of income and expenses	1
Formula used to calculate savings	1
Total	5

- (c) How much money could be saved each week?

Solution	
\$241 - \$162 = \$79	
Specific behaviours	Marks
Calculates the correct difference	1
Total	1

3. (a) What is the penalty rate for an apprentice who works on a Saturday during normal hours?

Solution	
Rate is \$10.80 per hour	
Penalty rate is 33% more	
$\$10.80 \times 33\% = \3.56	
Penalty rate = $\$10.80 + \$3.56 = \$14.36$ per hour	
Specific behaviours	Marks
Calculates % increase on normal rate	1
Calculates penalty rate	1
Total	2

- (b) Calculate how much the apprentice earns for the week, if he works 16 hours from Monday to Friday and seven hours on Saturday.

Solution	
$16 \times \$10.80 + 7 \times \$14.36 = \$273.32$	
Specific behaviours	Marks
Applies the normal rate to week-day hours	1
Applies the penalty rate to Saturday hours	1
Calculates total weekly earnings	1
Total	3

Sample assessment task

Mathematics – Foundation Year 12

Task 11 – Unit 4

Assessment type: Practical application

Conditions:

Time for the task: 50 minutes

In class, calculator permitted

Marks: 36 marks

Task weighting: 5% of the school mark for this pair of units

Mix different concentrations of fluid

A commercial kitchen has various surfaces which require cleaning. A liquid concentrate is mixed with water to produce different strengths for cleaning each of these various surfaces.

In this task, a coloured liquid will be used to simulate the cleaning concentrate.

Using your understanding of ratios and fractions, you are to make up the following five solutions:

Solution 1: 1 part concentrate and 3 parts water; that is, 1:3. (100 mL of concentrate = 1 part)

Solution 2: Stronger than solution 1

Solution 3: Weaker than solution 1

Solution 4: Double the amount of solution 1

Solution 5: Three times the amount of solution 1

Things to consider

- What calculation do you need to do before you make up solution 1?
- What measurements do you need to do to make solution 1?
- How will you know if the solution is stronger or weaker?
- What calculations do you need to do to make up solutions 4 and 5?

What is expected?

1. Solutions made up to the above specifications.
2. A label on each solution which includes:
 - the name of the solution
 - the quantities of concentrate and water used to make the solution
 - the amount of solution in mL.
3. Answer the following questions:
 - (a) What fraction of the total amount of solution 1 is the concentrate?
 - (b) How will you know if a solution is stronger or weaker?
 - (c) Is it correct to say the concentrate will still be the same fraction in solutions 4 and 5? Explain your answer.

Marking key for sample assessment task 11 – Unit 4

Parts 1 and 2

Solution 1: 1 part concentrate and 3 parts water. That is 1:3. (100 mL of concentrate = 1 part)

Preparing Solution 1		
Give the students the information and then have some discussion (either individually or in small groups) to ensure that they understand the task.		
Solution 1 – A ratio of 1:3 means I would measure 100 mL of concentrate and add it to 300 mL of water. That would make up 400 mL in total.		
Specific behaviours	Marks with support	Marks without support
Responds appropriately to 'What calculations do you need to do before you make up solution 1?'	1	2
Responds appropriately to 'What measurements do you need to do to make solution 1?'	1	2
Measures correct amounts for solution	1	2
States the total amount of fluid in the solution	1	2
Total	4	8

Solution 2: Stronger than solution 1

Carrying out the task		
Stronger solution would have more concentrate added to 300 mL of water or 100 mL of concentrate added to less than 300 mL of water.		
Specific behaviours	Marks with support	Marks without support
Increases the amount of concentrate only or reduces the amount of water only	1	2
States the amount of concentrate and water used to make solution	1	2
States the total amount of fluid in the solution	1	2
Total	3	6

Solution 3: Weaker than solution 1

Solution		
Weaker solution would have less concentrate added to 300 mL of water or 100 mL of concentrate added to more than 300 mL of water.		
Specific behaviours	Marks with support	Marks without support
Reduces the amount of concentrate only or increases the amount of water only	1	2
States the amount of concentrate and water used to make solution	1	2
States the total amount of fluid in the solution	1	2
Total	3	6

Solution 4: Double the amount of solution 1

Solution		
Solution would have 200 mL of concentrate added to 600 mL of water. That would make up 800 mL in total which is double the amount of solution 1.		
Specific behaviours	Marks with support	Marks without support
Doubles both concentrate and water	1	2
States the amount of concentrate and water used to make solution	1	2
States the total amount of fluid in the solution	1	2
Total	3	6

Solution 5: Three times the amount of solution 1

Solution		
Solution would have 300 mL of concentrate added to 900 mL of water. That would make up 1200 mL in total which is three times the amount of solution 1.		
Specific behaviours	Marks with support	Marks without support
Triples both concentrate and water	1	2
States the amount of concentrate and water used to make solution	1	2
States the total amount of fluid in the solution	1	2
Total	3	6

3. Answer the following questions:

Solution	
<p>(a) What fraction of the total amount of solution 1 is the concentrate?</p> <p>There are four parts, so the concentrate would be $\frac{1}{4}$ of the solution.</p>	
<p>(b) How will you know if a solution is stronger or weaker?</p> <p>The colour would be darker if it is stronger or lighter if it is weaker.</p> <p>Or</p> <p>Correct references to more/less of concentrate/water.</p>	
<p>(c) Is it correct to say the concentrate will still be the same fraction in solutions 4 and 5? Explain your answer.</p> <p>Yes, the fraction will still be the same because, in solution 4, 200 mL is $\frac{1}{4}$ of 800 mL.</p> <p>And, in solution 5, 300 mL is $\frac{1}{4}$ of 1200 mL.</p>	
Specific behaviours	Marks
Determines the fraction of the total amount of solution 1	1
Explains how to recognise relative strength of liquid	1
Recognises the fraction of concentrate remains the same	1
Makes correct reference to quantities in explanation	1
Total	4

Sample assessment task

Mathematics – Foundation Year 12

Task 16 – Unit 4

Assessment type: Practical application

Conditions

Time for the task: two weeks

Calculators and computers permitted

Marks: 48 marks

Task weighting: 7% of the school mark for this pair of units

Start a new job: Income, travel, getting there on time and travel expenses

You are starting a new job and want to know how much you will be paid, how long it will take you to get to work, whether you should use public transport or your own car, and how much of your income will be used to cover work-related travel expenses.

You are to research and prepare a report on your findings which includes the following information.

1. Job details (10 marks)

Identify the type of job, the place of employment, rate of pay and the hours that you will work in one working week, including the weekend, if applicable.

2. Income (10 marks)

Assuming you are at least 18 years old and earning at least the minimum rate of pay, determine your weekly gross and net pay.

3. Travel and time management (10 marks)

You are to plan to use two modes of travel:

Plan A: Using public transport

Plan B: Driving a car, including details of the type of car you drive

For each plan, determine the latest time you need to leave for work so that you arrive on time and how long it will take to travel to work.

Google maps and the Transperth website may assist you with this. You need to indicate in your report where you got your information from.

4. Travel expenses

(18 marks)

Consider weekly costs involved for both modes of transport.

For travel by public transport, you need to consider all daily bus/train fares to and from the place you work.

For travel by car, you need to consider the cost of fuel based on the fuel consumption of your particular car and parking costs, if applicable.

The following websites will assist you.

Tax tables

<https://www.ato.gov.au/uploadedFiles/Content/MEI/downloads/BUS39408n10050514.pdf>

Travel

<http://www.transperth.wa.gov.au/Journey-Planner>

<http://www.fuelwatch.wa.gov.au/fuelwatch/pages/home.jsp>

To determine the fuel consumption of any particular car, refer to the car manufacturer's website.

Marking key for sample assessment task 16 – Unit 4

1. Job details

Sample response		
Includes name of the job, e.g. first-year apprentice hairdresser working in a salon in Como Pay rate is \$10.80 per hour on weekdays and \$14.36 per hour on Saturdays I am required to work 16 hours from Monday to Friday and seven hours on Saturday.		
Specific behaviours	Marks with support	Marks without support
States location of workplace	1	2
States pay rate	1	2
Includes penalty rate	1	2
States hours of work during week	1	2
Identifies whether weekend work is included	1	2
Total	5	10

2. Income

Sample response		
First Year apprentice hairdresser working 16 hours during the week and seven hours on Saturday earns a gross pay of $16 \times \$10.80 + 7 \times \$14.36 = \$273.32$ per week. Net pay is \$273.32 as there is no tax payable on this amount		
Specific behaviours	Marks with support	Marks without support
States the hours worked	1	2
Applies rate of pay to determine income	1	2
States gross income per week	1	2
Identifies if any tax payable	1	2
Determines net pay	1	2
Total	5	10

3. Travel and time management

Sample response		
Working in Como and required to start work at 8.30 am Public transport using the Journey planner on Transperth website Leave home at 7.30 am to walk to catch bus at 7.40 am Bus arrives at Transfer Station at 7.52 am Catch bus at 8.04 am to arrive at bus stop near workplace at 8.17 am Walk to workplace to arrive at 8.20 am Time taken to get to work 8.20 am – 7.30 am = 50 minutes By car and using Google maps, time taken to get to work is 15 minutes Leave home at 8.10 am to arrive at 8.25 am		
Specific behaviours	Marks with support	Marks without support
Gives details of latest time to leave home for both modes of transport	2	4
Determines total time taken to arrive at work for both modes of transport	2	4
Indicates sources of information	1	2
Total	5	10

4. Travel expenses

Sample response		
Public transport using a prepaid ticket at 25% discount		
Fare for journey of one zone is \$2.18		
Working Monday to Saturday involves 12 fares at a cost of $12 \times \$2.18 = \26.16		
Car		
Distance travelled per journey is 9.4 km. Distance travelled for 12 journeys from Monday to Saturday is $12 \times 9.4 = 112.8$ km		
Fuel consumption for a small car is approximately 8 L/100 km		
$\frac{112.8}{100} \times 8 = 9.024$		
So, would use about 9 L of fuel for work travel		
Fuel is 118 cents/L		
Approximate total fuel costs for travel to and from work are approximately $9 \times \$1.18 = \10.62		
No parking fees required		
Specific behaviours	Marks with support	Marks without support
Determines fare for one journey	1	2
Determines total amount for fares/week	1	2
Determines distance travelled for one journey	1	2
Determines total distance travel/week	1	2
Identifies fuel consumption rate for specific car	1	2
Determines total fuel consumption	1	2
Identifies cost of fuel/L	1	2
Determines total cost for fuel/week	1	2
Acknowledges other costs, such as parking	1	2
Total	9	18