Answer Booklet

AS91026 (version 3)
Mathematics and Statistics

Apply numeric reasoning in solving problems
Te whakamahi whakaaro tau whaitake hei whakaoti rapanga

Te whai hua - kia ora!

sorted in Schools

LEVEL	CREDITS
1	4

SORTED THEMES

KiwiSaver
Debt
Goals
Managing my Money

This resource provides answers to the questions in the student AS91026 Practice booklet.

1

Topic One:

Understanding your payslip

Topic 1, Activity

IRD number	This is an eight or nine-digit number that only you have. It is given to you by the Inland Revenue Department (IRD). This number will be on all of your payslips and KiwiSaver statements when you are working.
Pay period	This is the length of time that the payslip relates to, for example, a week, a fortnight, or a month.
Hours worked	These are the total hours that you have worked over this pay period.
Overtime	These are the extra hours that you have worked in this pay period. These are above what you have agreed in your employment contract.
Gross pay	The amount that you earn before deductions such as tax are taken off.
Net pay	This is the amount that you will have in your pay packet each week or fortnight after the deductions have been taken out.
PAYE tax	For every dollar you earn you will have to pay tax. The amount that you pay will depend on how much you earn.
KiwiSaver	This is a voluntary government investment scheme to help you save for your retirement. If you have a salary, you can choose to contribute 3%, 4%, 6%, 8% or 10% of your gross pay. Your employer will also contribute at least 3% to help your fund grow. After contributing to it for three years, you can use your funds to help buy your first home.
Holiday pay	You are entitled to a number of holiday days each year and the amount you have are shown on your weekly/fortnightly payslip.
Sick pay	You are entitled to a number of paid sick days each year and the amount you have are shown on your weekly/fortnightly payslip.

Topic 1, Activity 2

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{8}$	0.125	12.5%
$\frac{5}{8}$	0.625	62.5%
$\frac{3}{20}$	0.15	15%
$\frac{1}{50}$	0.02	2%
$\frac{57.5}{50}$	1.15	115%

Topic 1, Activity 3

a.

FIGURE ELECTRICAL LTD

Roimata Paerata
16 Main Road
Greytown

IRD Number 027-598-412
Tax Code MSL

Annual leave available 7.5 days
Sick leave available 3.0 days

Period End **01/06/2021**

Annual Salary **$37,970**

Description	Quantity	Units	Rate	Total	This Pay
Ordinary time	41.00	Hours	$18.25	$748.25	
Overtime	2.50	Hours	$22.81	$57.03	
Gross Pay					$805.28
Income Tax (PAYE)					-$122.08
ACC Levy					-$11.19
Student Loan Repayment					$0.00
Kiwisaver 3%					$0.00
Net Pay					**$672.01**
KiwiSaver Employer Contribution					$0.00

Note: Did you remember to include a dollar sign and round the amounts to 2 decimal places?

b. ($122.08 + $11.19) ÷ $805.28 x 100% = 16.55%

c. 0.06 x $805.28 = $48.32

Topic 1, Activity 4

a.

For each dollar of income	Income tax rate in percentage form	Income tax rate in decimal form	Income tax rate in the simplest fraction form
Up to $14,000	10.5%	0.105	$\frac{21}{200}$
Over $14,000 and up to $48,000	17.5%	0.175	$\frac{7}{40}$
Over $48,000 and up to $70,000	30%	0.3	$\frac{3}{10}$
Over $70,000 and up to $180,000	33%	0.33	$\frac{33}{100}$
Over $180,000	39%	0.39	$\frac{39}{100}$

b. i. Tax payable on $25,000:
= (0.105 x $14,000) + 0.175 x ($25,000 – $14,000)
= $3,395

ii. Tax payable on $50,000:
= (0.105 x $14,000) + 0.175 x ($48,000 – $14,000) + 0.3 x ($50,000 – $48,000)
= $8,020

iii. Tax payable on $75,000:
= (0.105 x $14,000) + 0.175 x ($48,000 – $14,000) + 0.3 x ($70,000 – $48,000)
+ 0.33 x ($75,000 – $70,000)
= $15,670

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Topic Two:

Buying goods and services

Topic 2, Activity 1

1) **a.** $1,250 x 1.15 = $1,437.50

b. $3,200 x 1.15 = $3,680

c. $44.50 x 1.15 = $51.18

2) **a.** $2,300 ÷ 1.15 = $2,000

b. $82.75 ÷ 1.15 = $71.96

c. $1,250 ÷ 1.15 = $1,086.96

3) $825 ÷ 1.15 = $717.39
$825 – $717.39 = **$107.61**

Topic 2, Activity 2

a. **i.** Monika will pay $92.14 and Dannielle and Esther will each pay $61.43

ii. Monika will pay $27.86 and Dannielle and Esther will each pay $18.57

b. Monika will pay $41.50, Dannielle will pay $10.38 and Esther will pay $31.13

c. Monika and Dannielle will each pay $65.63 and Esther will pay $43.75

3

Topic Three:

Borrowing money

Topic 3, Activity 1

a.

Month	Balance owed	Monthly interest at 2% per month	Amount paid	New balance
May	$3,800	$76.00	$150	$3,726.00
June	$3,726.00	$74.52	$150	$3,650.52
July	$3,650.52	$73.01	$150	$3,573.53
August	$3,573.53	$71.47	$150	$3,495.00
September	$3,495.00	$69.90	$150	$3,564.90

b. answers will vary.

c. 36 x $150 = $5,400

d. Percentage increase = $\frac{\$5,400 - \$3,800}{\$3,800}$ x 100% = 42.1%

Topic 3, Activity 2

a. $55 + ($1.80 x 24) = $98.20

b. $499 ÷ 24 = $20.79

Topic 3, Activity 3

a. 5 years = 60 months
$252 x 60 = $15,120

b. $15,120 – $12,000 = $3,120

c. $3,120 – $2,686 = $434.

Topic 3, Activity 4

a. 1 year = 26 fortnights
$20,020 ÷ 26 = $770

b. ($860 – $770) x 0.12 = $10.80

4

Topic Four:

Saving for a goal

Topic 4, Activity 1

a. $4,000 x 0.01 = $40

b. $10,000 x 0.0105 = $105

c. $3,000 x 0.025 = $75

d. $2,000 x 0.0085 = $17

Topic 4, Activity 2

a. $2,680.25

b. $848.56

c. Interest earned on option A = $1,200 x 0.0425 x 5 = $255
Interest earned on option B = $1,200 x 1.0375^5 – $1,200 = $242.52
The higher interest rate for Option A makes this the best option.

d. $\$5{,}000 = P\left(1 + \frac{3.75}{100}\right)^6$

P = $5,000 ÷ 1.0375^6
P = $4,009.05
Wayne should invest $4,009

Topic 4, Activity 3

a. $24 x 5 x 5 x 2 = $1,200

b. Meleane invests 4% of her pay in Kiwisaver each fortnight. Her employer contributes 3% of Meleane's gross pay and the government puts in 50 cents for every dollar Meleane contributes (up to a maximum of $521 per year).

i. 0.04 x $1200 = $48

ii. $48 x 26 = $1,248
$1,248 ÷ 2 = $624

Yes, Meleane is contributing more than the $1,042 needed to get the maximum government contribution.

iii. ($48 + 0.03 x $1,200) x 26 + $521 = $2,705

Topic 4, Activity 4

a. $18 x 8 x 5 = $720

b. $720 x 52 = $37,440

c. 0.06 x $37,440 = $2,246.40

d. 0.1 x $550,000 = $55,000

e. 0.08 x $37,400 + 0.03 x $37,400 + $521 = $4,635

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Topic Five:

Tools that support financial decisions

Topic 5, Activity 1

a. Over the past 5 months, Joe has saved, on average, $360 per month.

If he sticks to the level of saving, in the next six months he will save a further $360 x 6 = $2,160.

Total saved = $1,800 + $2,160 = $3,960. This is a shortfall of $520.

Joe will either need to reduce his spending or increase the timeframe needed to reach his goal.

b. Joe needs to save an additional $20 per week to reach his goal.

6 months = 26 weeks

$520 ÷ 26 = $20

Joe could achieve this by reducing his spending or by working an extra 1.5 hours each week.

Topic 5, Activity 2

Here are the fortnightly expenses for a flat shared by seven people:

Expenses	Fortnightly
Groceries – Including toiletries	$1,200
Cat Food	$30
Savings for end of year party	$10
Other fortnightly costs	$50

Monthly Expenses:

Expenses	Monthly
Rent to landlord	$4,900
Electricity	$350
Internet	$100
Media Subscriptions (Netflix, Sky, etc)	$80
Contents insurance	$100
TV Hire	$45

a. $990 + $5,575 x 12 ÷ 26 = $3,563.08

b. $3,563.08 ÷ 5 = $712.62

c. $4,900 ÷ 12 x 2 = $816.67

Topic 5, Activity 3

a. Total payments = $31.64 x 48 months
= $1,518.72
Interest and fees = total cost–cost of the fridge and delivery
= $1,518.72 – ($978 + $89)
= $451.72

b. $\frac{\$1,518.72 - \$1,067}{\$1,067} \times 100\% = 42.33\%$