Rachel

$\frac{36\frac{1}{2}}{38} = 96\%$ A terrific result, Rachel! Just a couple to check.

Regards, Kris

1

1mm Squares

Section A: Linear Functions

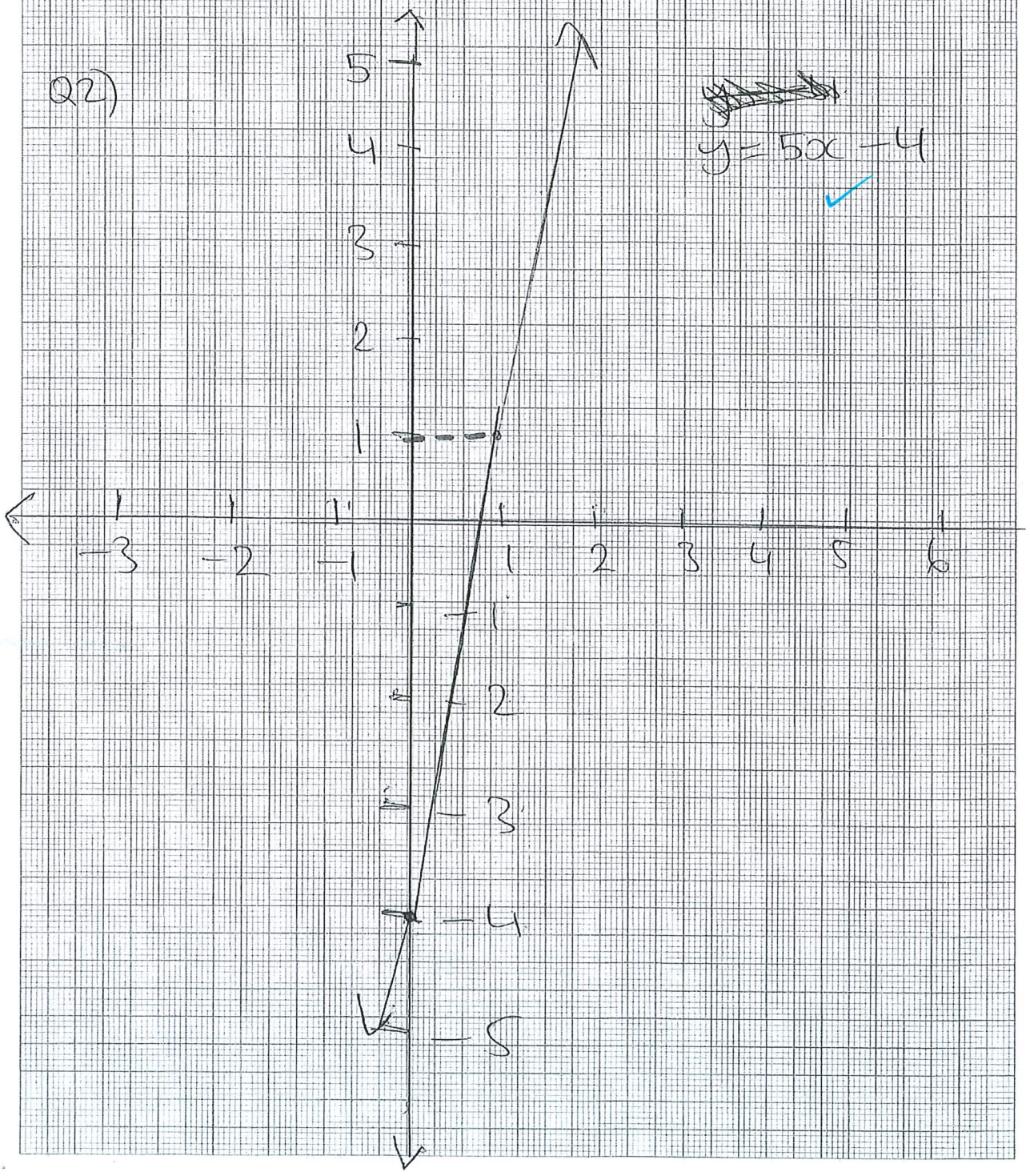
Q1) (6, 5) and (8, 6)

$$\frac{6-5}{8-6} \quad \checkmark$$

$$= \frac{1}{2} \quad \checkmark$$

great!

Q2)



1mm Squares

Q3)

a) $C = kN$ ✓

b) $C = kN$

$\frac{\$40}{32} = \frac{k(32)}{32}$ ✓

$k = \frac{\$40}{32}$ ✓

$k = \$1.25$

c) $C = kN$

$C = 1.25 \times 50$

$C = \$62.50$ ✓

4

d) The cost is determined by the litres of fuel that can be purchased. There is a limit on how much fuel can be filled into a car's tank. ✓ good answer, Rachel!

Q4)

a)

i)

N	0	75	150
1	-5000	6,775	18,550

✓ ✓ ✓

$(0 \times 157) - 5000$
$= 0 - 5000$
$= \$-5000$

$(75 \times 157) - 5000$
$= 11,775 - 5000$
$= 6,775$

$(150 \times 157) - 5000$
$= 23,550 - 5000$
$= 18,550$

1mm Squares

Q4)

a)

ii) See attached graph ✓

b)

i) (910 × 157) − 5000

= 14,130 − 5000

= 9,130 ← this is not an estimate. (from your graph: $9100)

ii) 5000 ÷ 157 = 31.84

= 32

32 × 157 = 5024

5024 − 5000 = 24 ✓

Therefore 32 is the minimum number of articles that must be produced to cover fixed costs.

By showing this working, Again this is not an estimate. Although it does correspond to your graph

iii) $10,000 = annual income

$5,000 = fixed costs

10,000 + 5,000 = $15,000

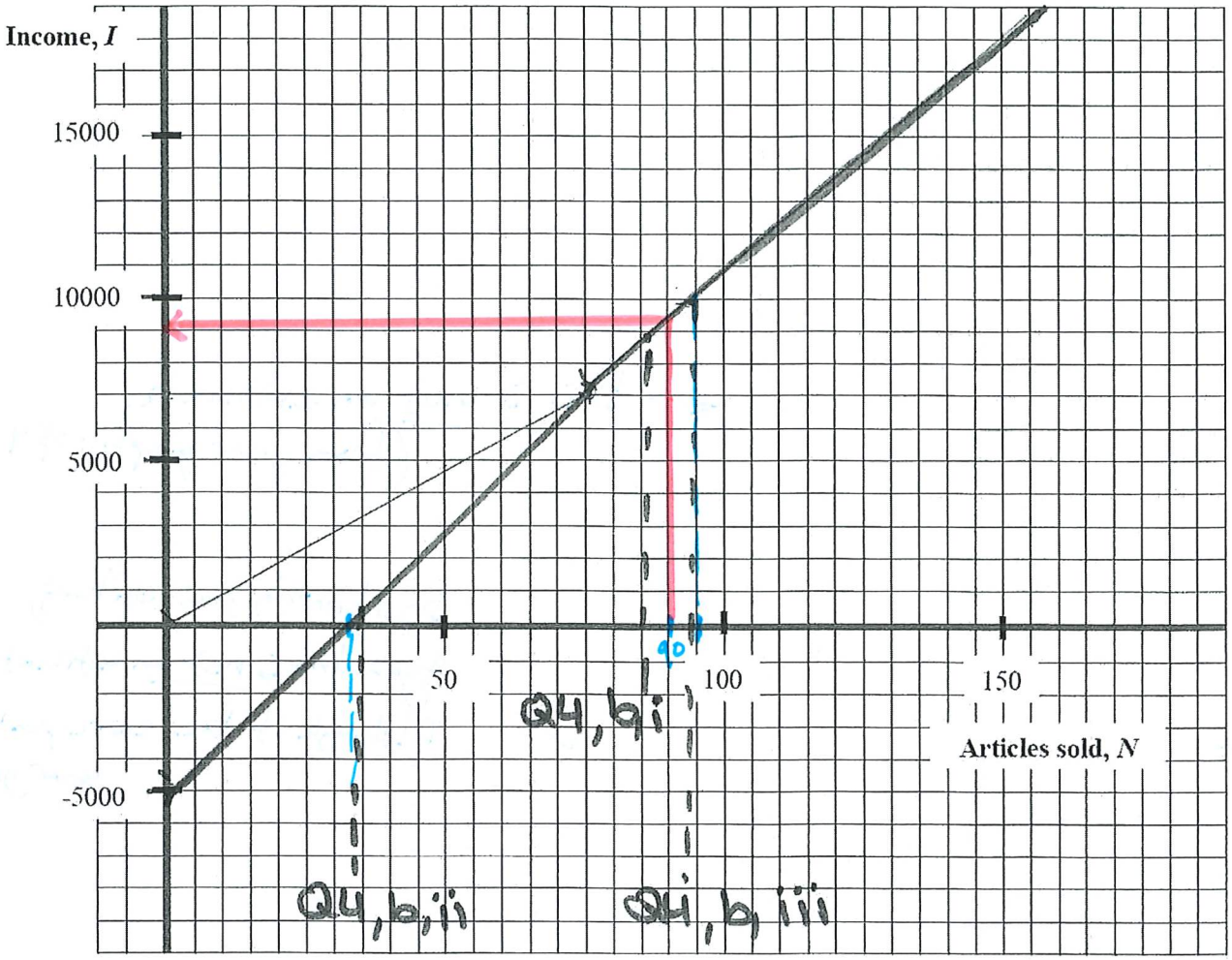
15,000 ÷ 157 = 95.54

= 96 95 articles from your graph

5/6

(4)

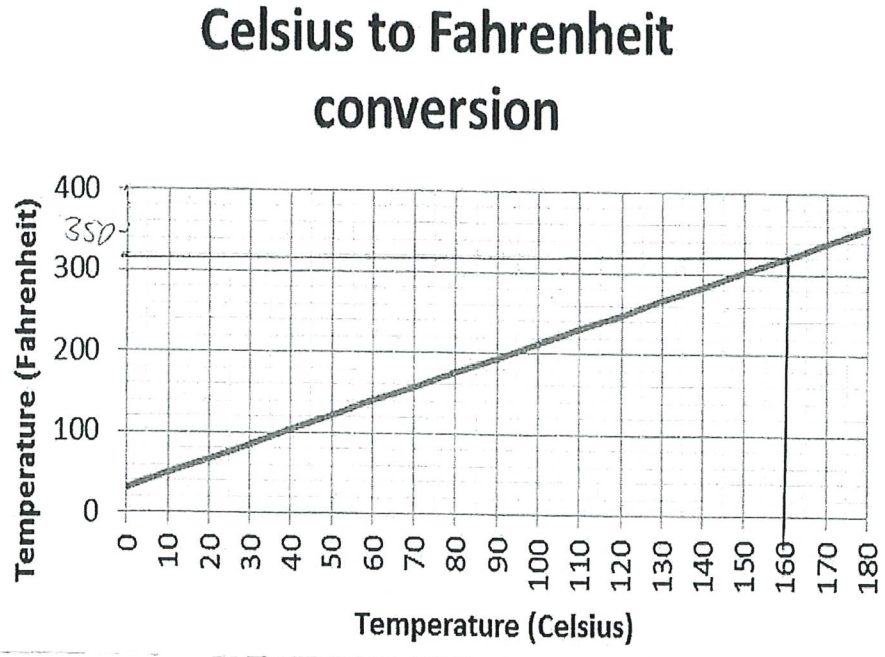
Grid for question 4/Section A (ATTACH TO YOUR ANSWER SHEET) **Name:** Rachel Loveday



5

5 Lucy found an old recipe for a carrot cake, which needed to be cooked at 325°F.

She uses the fact that freezing point is 0°C or 32°F and that boiling point is 100°C or 212°F to draw the conversion graph below.



Use Lucy's graph to find what temperature in Celsius (°C) she should set her oven to cook the carrot cake using this recipe.

325°F = 160°C

1mm Squares

Section B: Interest & Depreciation

Q1) $\frac{25}{100} \times 200 = \$50$ ✓

$200 - 50 = \$150$

$\frac{10}{100} \times 150 = \$15$ ✓

$\$150 - \$15$

$= \$135$

2

Q2)

a) $I = Prn$ ✓

$I = 25,000 \times 0.085 \times 2$ ✓

$I = \$4,250$

b) $I = Prn$ ✓

$1125 = 6000 \times r \times 5$

$\frac{1125}{30,000} = \frac{30,000r}{30,000}$ ✓

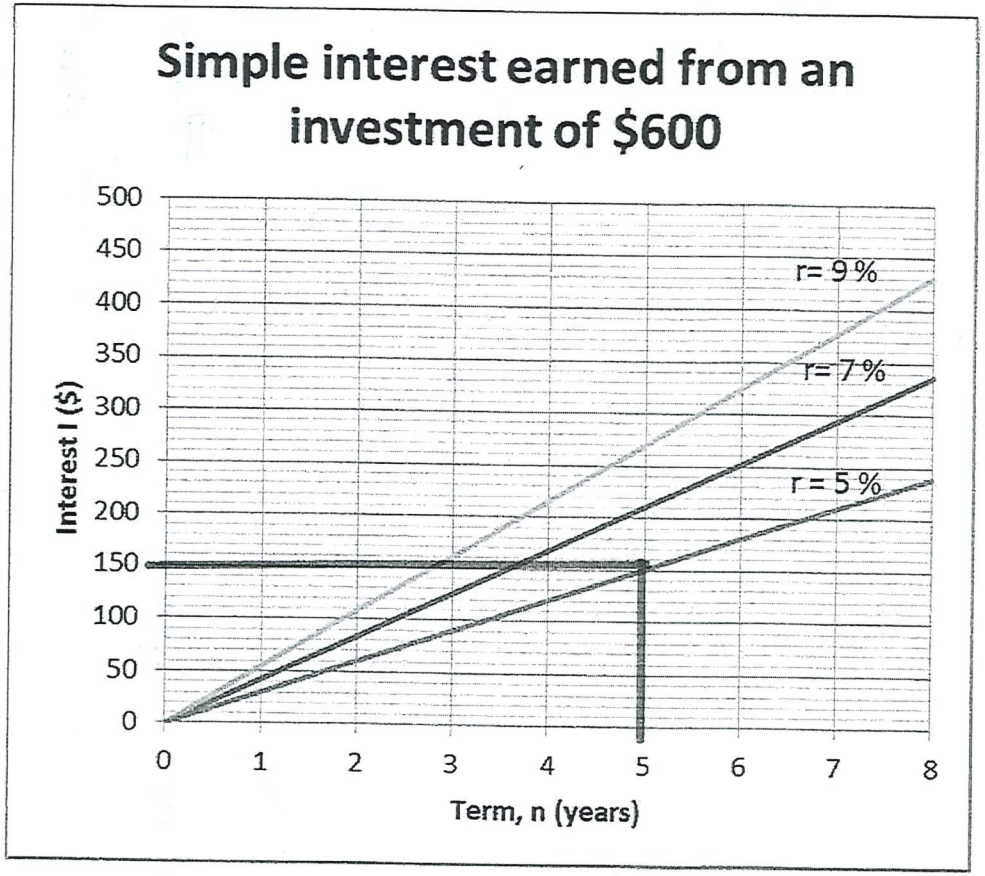
$r = 0.0375$ ✓

$= 3.75\%$ pa

3

Great working!

3 The graph below shows the simple interest earned on a principal of $600 for up to 8 years at three different annual interest rates.



According to this graph, how long will it take a principal of $600 to earn $150 if the interest rate is 5% p.a.?

5 years ✓

1mm Squares

Q4)

a) $S = V_0 - Dn$

$S = 80{,}000 - (5000 \times 5)$

$S = 80{,}000 - 25{,}000$

$S = \$55{,}000$

b) $S = V_0 - Dn$

$V_0 = 80{,}000$

$D = 5{,}000$

$S = 40{,}000$

$n = ?$

~~$40{,}000 = 80{,}000 - 5000 \times n$~~

$40{,}000 = 80{,}000 - 5000 \times n$ → $-40000 = -5000n$

$-80{,}000$ $-80{,}000$

$40{,}000n = 80{,}000 - 5{,}000n$

$\therefore n = \frac{-40000}{-5000}$

$40{,}000n = 75{,}000$

$n = \frac{75{,}000}{40{,}000}$

$n = 1.875$ years

= 8 years

(4)

1mm Squares

Q5)

a) $17,500 ✓

b) $27,500 − $17,500
= $10,000 ✓

c) $S = V_0 - Dn$

$0 = 27,500 - 2,500 \times n$

$0 = 27,500 - 2,500n$

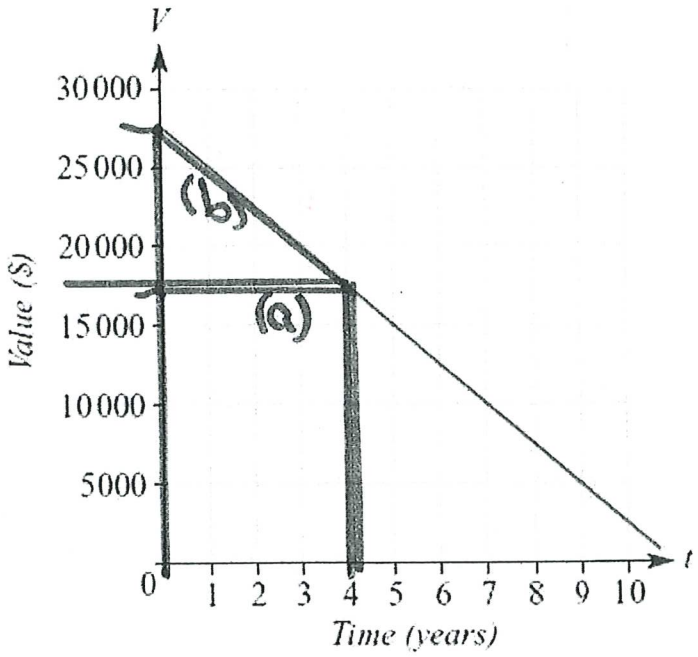
$2500n = 27,500$

$n = \frac{27,500}{2,500}$ ✓

$n = 11$ years

3

5 The graph below shows the depreciation of a car over its useful life.



a) How much was the car worth after 4 years?

b) How much was the total depreciation in the first 4 years?

c) How many years will it take to have a salvage value of $0?

Section C: Owning A Car

Q1) Toyota premium = $320

Discount = 12/100 × 320
= $38.40 ✓
= 320 − 38.40
= $281.60 ✓

Surcharge = 8/100 × 281.60
= $22.528
= $22.53
= 281.60 + 22.53
= $304.13

Total = $304.13

2

Q2) a) Vehicle value = $0

Stamp Duty = 3/100 × 0
= $0

Vehicle value = $15,000

Stamp Duty = 3/100 × 15,000 ✓
= $450

Vehicle value = $30,000

Stamp Duty = 3/100 × 30,000 ✓
= $900

4

Q2) (cont)
a)

Vehicle value = $45,000
Stamp Duty = 3/100 x 45,000
= $1,350

Vehicle value = $50,000
Stamp Duty = 3/100 x 45,000
= $1,350
= 5/100 x (50,000 - 45,000)
= 5/100 x 5,000
= $250 ✓

Total Stamp Duty = $1,350 + $250
= $1,600

Vehicle value = $60,000
Stamp Duty = 3/100 x 45,000
= $1,350
= 5/100 x (60,000 - 45,000)
= 5/100 x 15,000
= $750

Total Stamp Duty = $1,350 + $750 ✓
= $2,100

2 Stamp duty on private vehicles is calculated at the rate of 3% of the purchase price up to $45 000 plus 5% for every dollar over $45 000.

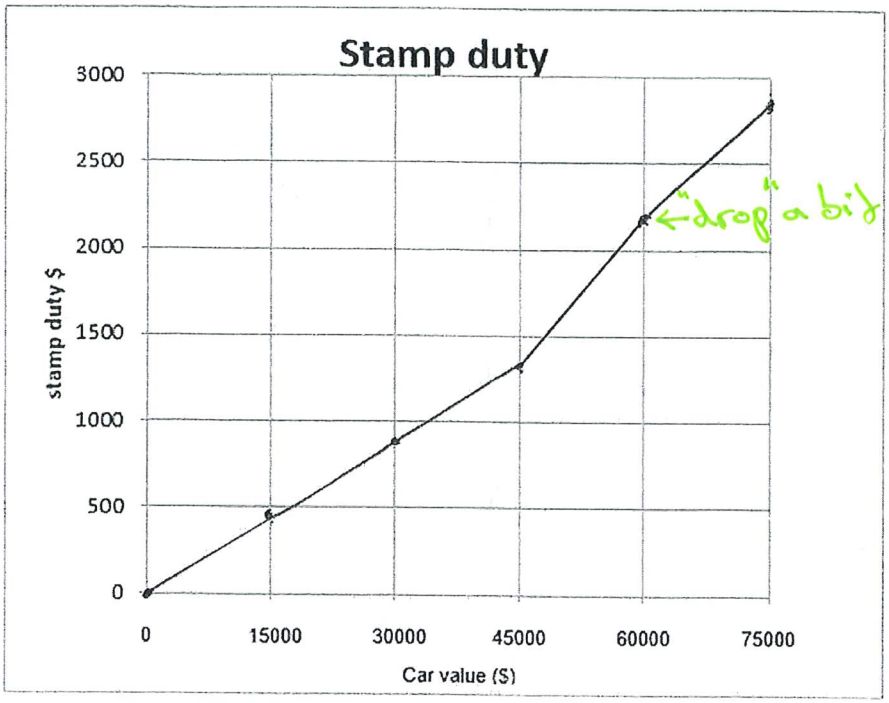
a) Copy and complete the table of values below showing purchase prices up to $50 000.

Vehicle Value ($)	0	15 000	30 000	45 000	50 000	60 000
Stamp Duty ($)	0	450	900	1350	1600	2100

b) Use your completed table to construct a graph on the graph paper provided at the end of this assignment.

4

Grid for question 2b) / Section C (ATTACH TO YOUR ANSWER SHEET) **Name:** RACHEL LOVEDAY



Checklist

I have:

- answered all questions on my own paper in my own hand-writing
- written clear working
- attempted all questions
- included all graphs.

If you are unable to complete this task for a specific reason, please contact your teacher to discuss alternative arrangements for demonstrating your skills and knowledge.

1mm Squares

Q3) Purchase Price = $48,500

GST = 10/100 × 48,500

= $4,850

$48,500 + $4,850

= $53,350

Stamp Duty = 4/100 × 53,350

= $2,134

3

Total Cost = $53,350 + $2,134 + $834 + $50 + $876 + $1,240

= $58,484

Q4)

a) (350×2) + ($151×2) + (40×52.18) + (28×52.18)

= 700 + 302 + 2,087.20 + 1,461.04

= $4,550.24

2

b) Cost for one year = $4,550.24

Cost per week = $4,550.24 ÷ 52.18

= $87.202759 68

= $87.20

= $87

6

1mm Squares

Q5) Fuel for 100 km = 9 L

Fuel for 1 km = $\frac{9}{100}$

= 0.09 L ✓

Fuel for 375 km = 0.09 × 375

= 33.75 L ✓

1

Q6) Interest = $28,000 × 0.09 × 3

= $7,560 ✓

Total to repay = $28,000 + $7,560

= $35,560 ✓

No. of weeks in 3 yrs = 52.18 × 3

= 156.54

Weekly amount = $\frac{35,560}{156.54}$ ✓

= $227.1623866

= $227.17

Excellent!! ✓

2