Carlingford High School

Mathematics

Modified

Year 9 Term 1 Examination

5.1 Course

2018

Name: SOLUTIONS

Teacher: Ms Strilakos

Time allowed: 50 minutes

- Board approved calculators may be used.
- Show all necessary working.
- Marks may be deducted for careless or untidy work.
- Complete the examination in blue or black pen.

TOPIC	Earning Money	Linear Relationships	TOTAL
	/34	/31	/65

Question 1

Jeyda works at Kmart for 6 hours per week and earns $10.50 per hour.

How much money does she earn in a week?

$6 \times 10{\cdot}50 = \$63$

[1]

Question 2

A tailor earns $42.50 per hour and works for 37 hours every week. How much does he earn in one week?

$37 \times 42{\cdot}50 = 1572{\cdot}50$

[1]

For the following questions, assume that

1 year = 12 months = 52weeks

Question 3

If a person earns $783 per week, how much do they earn in one month?

$783 \times 52 \div 12 = 3393$

$783 \times 52 = 40716$

$40\,716 \div 12 = 3393$

[2]

Question 4

Jed's normal rate of pay is $12.70 per hour.

(i) If Jed works 16 hours at **the normal rate** how much does he earn altogether?

$16 \times 12{\cdot}70 = 203{\cdot}20$

[1]

When he works overtime he is paid a rate of time-and-a-half for this overtime.

(iii) If Jed works 4 hours overtime, how much does he earn for this 4 hours of overtime work?

$1{\cdot}5 \times 12{\cdot}70 \times 4 = 76{\cdot}20$

[2]

Question 5

Monse earns $432 for working 24 hours per week at the normal rate.

(i) How much does she earn per hour?

$\frac{432}{24} = \$18$

[1]

When she works overtime on a Saturday she is paid at a rate of time-and-a-half.

(ii) What is the time-and-a-half rate of pay for each hour? {use your answer from part (i) to help}

$1{\cdot}5 \times 18 = \$27$

[1]

(iii) If she works 5 hours overtime on a Saturday how much does she earn for this overtime?

$5 \times 27 = \$135$

[1]

(iv) If during one week, she works her usual 24 hours at the normal rate, and then she works an extra 5 hours on the Saturday, earning the time-and-a-half rate, how much does she earn altogether in that week?

Total Pay for Normal Hours = $24 \times 18 = 432$

+

Total Pay for Overtime Hours = 135

∴ Total Pay Altogether for this week = $432 + 135$

$= \$567$

[1]

Question 6

Aidan works at a factory making earphones.

He earns $1.50 for each set of earphones he attaches the foam pads to.

(i) If Aidan completes 60 sets of earphones in one day, how much does he earn for that day?

$1.50 \times 60 = 90$

[1]

Aidan will receive a $50 bonus if he can complete at least 350 sets of earphones across a 5-day week.

(ii) How many would he need to complete each day to earn this bonus?

$350 \div 5 = 70$

[1]

(iii) In a week when Aidan completes 400 sets of earphones, how much does he earn altogether?

$400 \times 1.50 + 50$

$= 600 + 50 = 650$

[2]

Question 7

April works in a shoe shop where she earns $420 per week, plus 10% commission on all her sales.

In a week when she sells shoes to the total value of $3700, how much does she earn altogether?

$420 + 0.1 \times 3700$

$= 420 + 370 = \$790$

[3]

Question 8

Matthew earns $3240 per month, and is paid a bonus of 8% of his salary for the year.

(i) How much does he earn in a year before his bonus?

$3240 \times 12 = 38\,880$

(ii) How much is Matthew's bonus?

8% of $38\,880 = 3110.40$

(iii) How much does he earn altogether for the year?

$38\,880 + 3110.40 = 41\,990.40$

[1+2+1]

Question 9

Calculate the pay earned by piecework if Emily folds 320 leaflets at 20 cents per leaflet. (Give your answer in dollars)

$320 \times 0.2 = \$64$

[2]

Question 10

Annual leave loading is an extra 17.5% of 4 weeks pay.

If Sam earns $24 960 per year

(i) How much does he earn per week?

(Assume exactly 52 weeks in a year)

$480

[1]

(ii) What is his pay for 4 weeks?

$1920

[1]

(iii) What is his leave loading for 4 weeks?

$1920 \times 17.5\% = 336$

[1]

(iv) What is his total holiday pay for 4 weeks?

$1920 + 336 = 2256$

[1]

Use the tax tables provided on the separate sheet to help work out each of the following tax questions.

Question 11

Andrew earns $53 490 per year. He also earns $230 interest on his bank account investments.

He has work related expenses of $420 each year.

(i) What is Andrew's total Income?

$53490 + 230 = 53720$

[1]

(ii) How much are his deductions?

420

[1]

(iii) What is Andrew's taxable Income?

$53720 - 420 = 53300$

[1]

(iv) Calculate Andrew's income tax payable on his taxable income.

Tax Payable $= 3572 + 0.325 \times (53300 - 37000)$

$= 3572 + 0.325 \times 16300$

$= 3572 + 5297.50$

$= 8869.50$

[3]

Question 12

Complete the table of values for each equation given:

(i) $y = x + 3$

x	0	1	2	3	4
y	3	4	5	6	7

[2]

(ii) $y = x \div 4$

x	20	16	12	8	4
y	5	4	3	2	1

[2]

(iii) $y = 4x - 2$

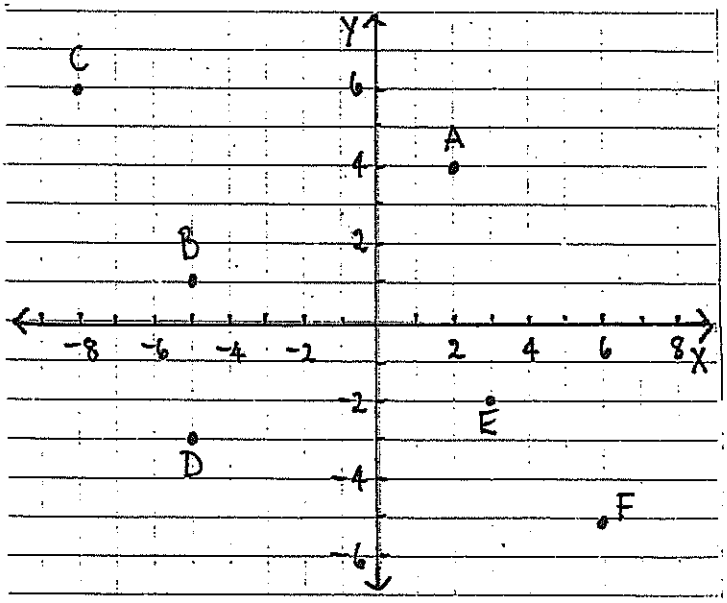
x	5	3	2	0	-2
y	18	10	6	-2	-10

[3]

Question 13

Write the coordinates of each point shown on the number plane below.

[3]



A (2, 4) B (-5, 1) C (-8, 6)

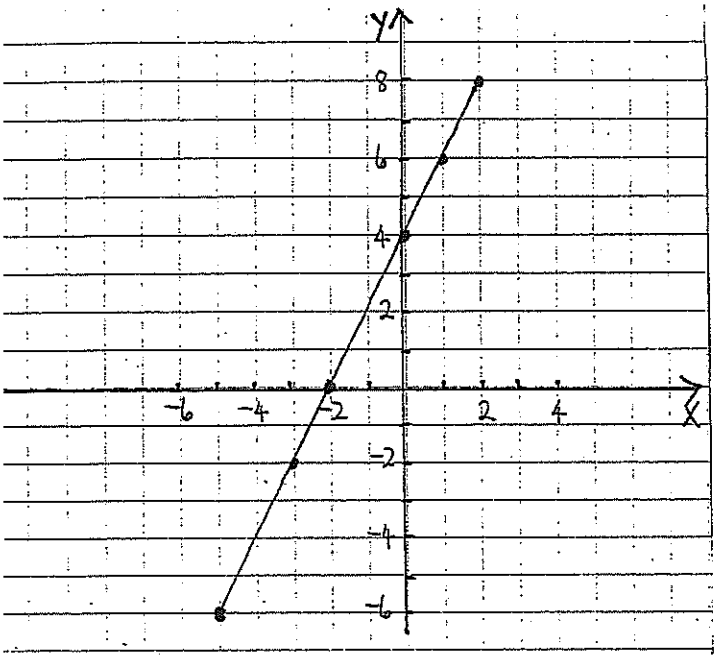
D (-5, -3) E (3, -2) F (6, -5)

Question 14

Graph the following table of values on the number plane given.

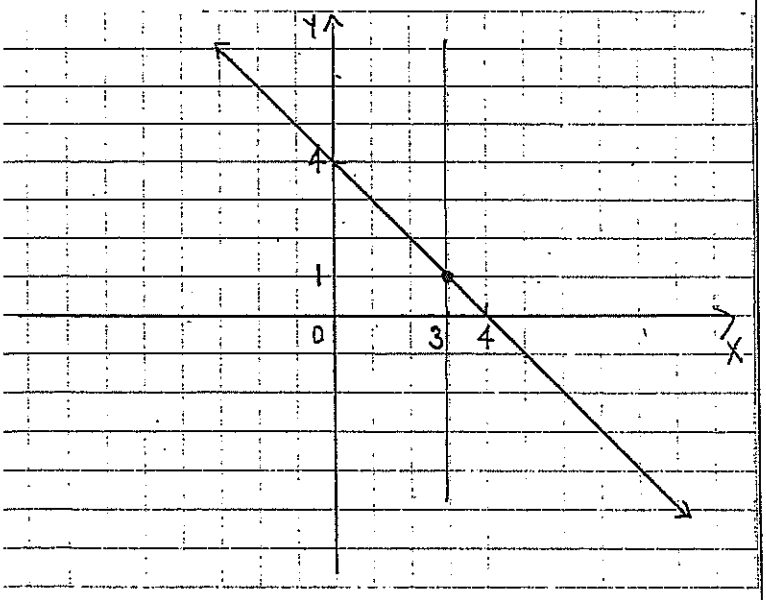
x	-5	-3	-2	0	1	2
y	-6	-2	0	4	6	8

[3]



Question 15

The graph below shows the line $y = 4 - x$.



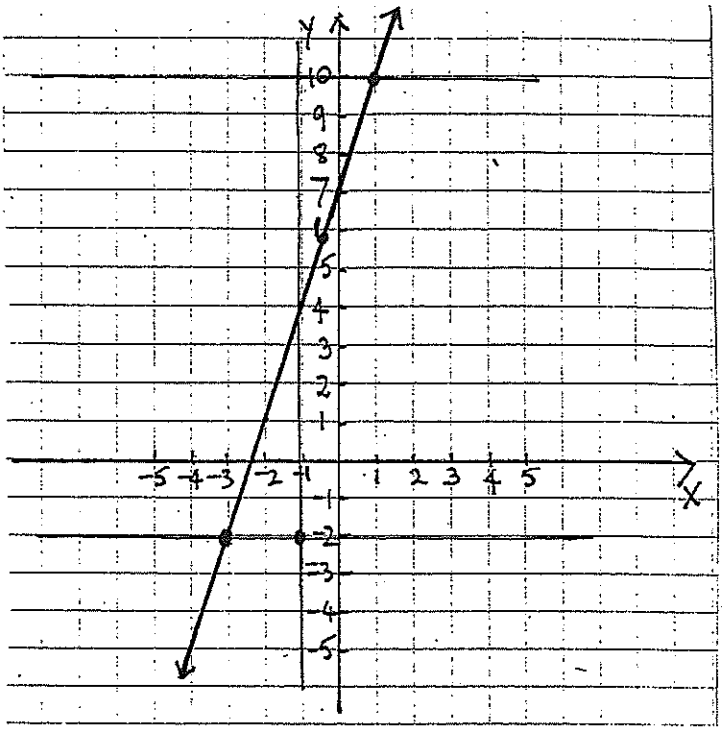
i) Now on the same number plane, sketch the line $x = 3$. [1]

ii) What are the coordinates of the point where these two lines cross?

(3, 1) [1]

Question 16

The graph below shows the line with equation $y = 3x + 7$.



a) i) Now on the same number plane, sketch the line $y = 10$. [1]

ii) What are the coordinates of the point where these two lines cross?

(1, 10) [1]

Also, on the same number plane above,

b) i) Sketch the line $y = -2$ [1]

ii) What are the coordinates of the point where this line crosses the line $y = 3x + 7$?

(-3, -2)

[1]

iii) What are the coordinates of the point where the line $y = -2$ crosses the line $x = -1$?

(-1, -2) [1]

Question 17

Which of the following points lie on the line $y = 4x - 3$?

Show your test in each case.

i) (2, 7)

LHS = 7 RHS = 4×2 − 3 = 5

LHS ≠ RHS ∴ NO. 2

ii) (-2, -11)

LHS = −11 RHS = 4×(−2) − 3 = −11

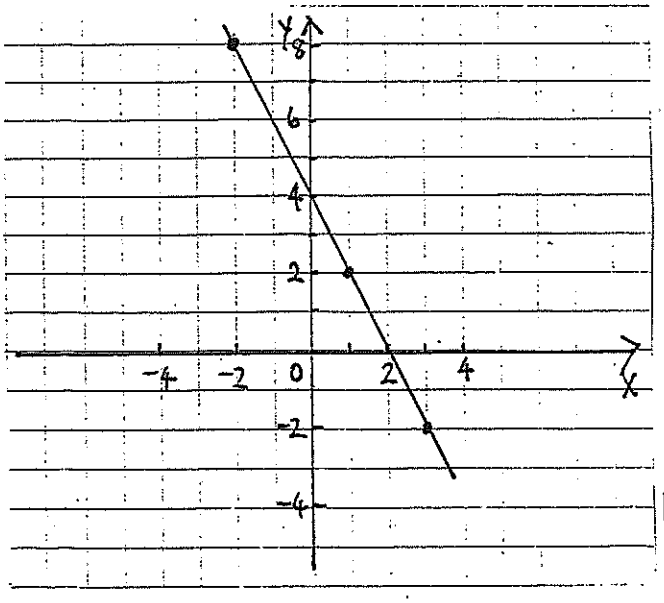
LHS = RHS ∴ YES. 2

[2+2]

Question 18

i) Graph the line $y = 4 - 2x$ on the number plane below using the table of values given.

x	-2	1	3
y	8	2	-2



2 [2]

ii) What is the value of the x-intercept?

$x = 2$ 1 [1]

iii) What is the value of the y-intercept?

$y = 4$ 1 [1]

Question 19

Write down the equation of the line that is:

i) Horizontal with a y-intercept of 4

$y = 4$ 1

ii) Vertical with an x-intercept of -3

$x = -3$ 1

iii) Horizontal and passing through (2, -4)

$y = -4$ 1

iv) Vertical and passing through (6, 5)

$x = 6$. 1

[4]

END OF TEST