

QUESTION 3

- 3.1 3.1.1 $y - 2 + 4x - 2xy$
- $$(y - 2xy) + (-2 + 4x)$$
- $$\sqrt{y(1-2x)} - 2(1-\sqrt{2x})$$
- $$\sqrt{(y-2)(1-2x)}$$
- Alternative method
- $$(y-2) + (4x-2xy)$$
- $$(y-2) + 2x(2-y)$$
- $$(y-2) - 2x(y-2)$$
- $$(1-2x)(y-2)$$
- (3)
- 3.1.2 $12y^3 + 14y^2 - 40y$
- $$2y(6y^2 + 7y - 20)$$
- $$2y(\sqrt{3y-4})(\sqrt{2y+5})$$
- Subtract half mark if '2y' absent in final answer.
- (3)
- 3.1.3 $4x^2 - 9$
- $$2^2 x^2 - 3^2$$
- $$(\sqrt{2x+3})(\sqrt{2x-3})$$
- (2)
- 3.2 3.2.1 $3xy - 3x - 2yx + 6xy - xy + 2x$
- $$\sqrt{6xy} - \sqrt{x}$$
- (2)
- 3.2.2 $(1-x)(x^2 - x - 2)$
- $$x^2 - \sqrt{x} - 2 - x^3 + \sqrt{x^2} + 2x$$
- $$-x^3 + 2x^2 + x - 2 \checkmark$$
- (for collecting like terms)
- Subtract half mark for each incorrect term in final answer, i.e., 2 errors gets zero marks.
- (3)

3.3 $9^{3x+2} = 81^{x+2}$

$$\sqrt{\quad} \quad \sqrt{\quad}$$
$$3^{6x+4} = 3^{4x+8}$$

or

$$9^{3x+2} = 9^{2(x+2)} \quad \checkmark$$

$$6x + 4 = 4x + 8 \quad \checkmark$$

$$9^{3x+2} = 9^{2x+4}$$

$$2x = 4$$

$$3x + 2 = 2x + 4 \quad \checkmark$$

$$\therefore x = 2 \quad \checkmark$$

$$x = 2 \quad \checkmark$$

(3)

3.3 3.4.1 $-6 < 2 + 4x \leq 18$

$$\sqrt{\quad} \quad \sqrt{\quad}$$

$$-8 < 4x \leq 16$$

$$\sqrt{\quad} \quad \sqrt{\quad}$$

$$-2 < x \leq 4$$

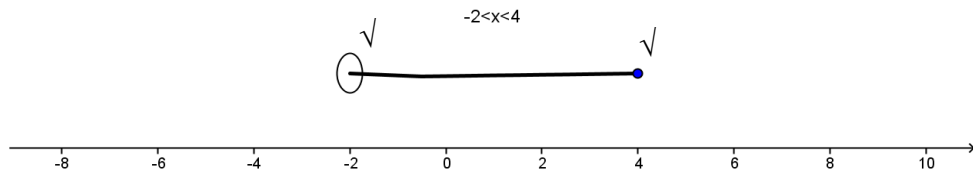
(2)

3.4.2 Interval notation $(-2; 4]$

(1)

Half mark each for the correct value

3.4.3 Number line:



(1)



3.5 $x + y = 4 \dots\dots\dots(1)$ and $xy = 4 \dots\dots\dots(2)$

From eq.(1) $y = 4 - x \checkmark$ or $x = 4 - y \checkmark$

Substitute: $y = 4 - x$ into eq.(2) sub $x = 4 - y$ into eq (2)

$x(4 - x) = 4$ $(4 - y)y = 4$

$x^2 - 4x + 4 = 0 \checkmark$ $y^2 - 4y + 4 = 0 \checkmark$

$(x - 2)(x - 2) = 0$ $(y - 2)(y - 2) = 0$

$\therefore x = 2 \checkmark$ $\therefore y = 2 \checkmark$

$y = 2 \checkmark$ $x = 2 \checkmark$

Alternative method

$x + y = 4 \dots\dots\dots(1)$

$xy = 4 \dots\dots\dots(2)$

from (2) $y = \frac{4}{x}$ (3) \checkmark or from (2) $x = \frac{4}{y}$ (3) \checkmark

Sub: (3) into (1) Sub: (3) into (1)

$x + \frac{4}{x} = 4$ $\frac{4}{y} + y = 4$

$x^2 - 4x + 4 = 0 \checkmark$ $y^2 - 4y + 4 = 0 \checkmark$

$(x - 2)(x - 2) = 0$ $(y - 2)(y - 2) = 0$

$x = 2 \checkmark$ $y = 2 \checkmark$

Sub: $x = 2$ in (2) Sub: $y = 2$ in (2)

$\therefore y = 2 \checkmark$ $\therefore x = 2 \checkmark$

(4)
[24]

QUESTION 4 [For Q4.1: accept any reasonable explanation]

- 4.1 4.1.1 Principal amount – This is the initial amount of money that is either borrowed from an institution/person or lent to an institution/person. ✓ (1)
- 4.1.2 Variance – The difference between the budgeted amount and the actual amount. ✓ (1)
- 4.1.3 Fixed expense – Expenses that do not change from month to month. e.g. home loan ✓ (1)
- 4.1.4 Income – Money earned from working. e.g. salary ✓ (1)
- 4.1.5 Short term investment – This would normally be an investment the duration of which is usually anywhere between 1 to 5 years. ✓ (1)
- 4.2 4.2.1 Balance = R1799 – R250 = R1549

$$A = P\left(1 + \frac{r}{100}n\right) \checkmark$$

$$= 1549\left(1 + \frac{15}{100} \times 2\right) \checkmark$$

Half mark for P even if compound formula is used

$$= R2013,70 \checkmark$$

$$\text{Instalment} = R2013,70 \div 24$$

$$= R83,90 \checkmark$$

Carry forward error from previous

 (3)
- 4.2.2 Hire purchase = R2013,70 + R250

C/f error from 4.2.1

= R2263,70 ✓
Extra cost = R2263,70 – R1799
= R464,70 ✓

Answer only: Full marks
- Alternate method**
- (HP cost) – (Cash price) = Extra cost
(2013.70) – (15649.00) = R464.70 ✓ ✓ (2)



4.3

INCOME AND EXPENDITURE: RECORD OF ALL EARNINGS FOR PRETTY.	
INCOME	AMOUNT
Pocket money ✓	R75,00 ✓
Part-time work at the supermarket ✓	R400,00 ✓
Total income	R475,00 ✓
EXPENDITURE	AMOUNT
Prepaid airtime ✓	R110,00 ✓
Shampoo ✓	R28,00 ✓
Deodorant ✓	R15,00 ✓
Sweets and movies ✓	R100,00 ✓
Donation at the church ✓	R40,00 ✓
Total expenditure	R293,00 ✓
SURPLUS	R182,00 ✓

(9)
[19]

4.3

INCOME AND EXPENDITURE: RECORD OF ALL EARNINGS FOR PRETTY.	
INCOME	AMOUNT
Pocket money ✓	R75,00 ✓
Part-time work at the supermarket ✓	R400,00 ✓
Donation at the church ✓	R40,00 ✓
Total income	R515,00 ✓
EXPENDITURE	AMOUNT
Prepaid airtime ✓	R110,00 ✓
Shampoo ✓	R28,00 ✓
Deodorant ✓	R15,00 ✓
Sweets and movies ✓	R100,00 ✓
Total expenditure	R253,00 ✓
SURPLUS	R262,00 ✓

(9)
[19]**TOTAL: 100**