

## 1<sup>st</sup> term – Revision Exercise 2

### **Binomial Expressions**

Exercise 1.1

1. Expand and simplify the following binomial expressions.

a) $(x+2)(x+3)$	b)(x+4)(x-5)	c) $(x-1)(x-8)$
d) $(3x + 1)(x + 2)$	e)(4x-3)(2x+1)	f)(5x-1)(5x-1)
g) $(4x + 3y)(3x - 5y)$	h) $(-3x + 4y)(3x - 2y)$	$i) \left(\frac{1}{5}a + \frac{1}{2}b\right) \left(\frac{2}{5}a - \frac{5}{4}b\right)$

- 2. The length and the breadth of a rectangular shaped land are (2a+5) and (2a-2) respectively. Determine the area of the field in terms of a.
- 3. Sadun made a square shaped wall decoration and Arosha made a rectangular shped wall decoration. The length of Arosha's wall decoration was 4cm more than of sadun's and the width was 2cm less than of Sadun's. Taking the length of one side of Sadun's wall decoration as x cm, find the length and width of Arosha's decoration and express its area in the form  $Ax^2 + Bx + C$ .

#### Exercise 1.2

1. Expand and simplify the following squares of binomial expressions.

a) 
$$(x+2)^2$$
b)  $(x-3)^2$ c)  $(-y+8)^2$ d)  $(3p+2)^2$ e)  $(4y-1)^2$ f)  $(4m-7n)^2$ g)  $(-2x+3)^2$ h)  $(-3y-4z)^2$ i)  $(\frac{1}{3}x+\frac{3}{2})^2$ 

- 2. Write each of the following as a square of a binomial expression and find the value.
- a)  $18^2$  b)  $23^2$  c)  $68^2$  d)  $140^2$

### Exercise 1.3

- 1. If x = 2 and y = 0 verify that  $(3x + 5y)(2x + y) = 6x^2 + 13xy + 5y^2$ .
- 2. Find the value of  $a^2 + b^2$  when a b = 2 and ab = 48.
- 3. Find the value of x y when  $x^2 + y^2 = 40$  and xy = 2.

## Congruence of Triangles

Exercise 2.1

- 1. Prove that the following pairs of triangles are congruent under suitable case and write corresponding elements.
  - I) ABC $\Delta$  and PQR $\Delta$





III) SQR $\Delta$  and TQP $\Delta$ 



IV) ABC $\Delta$  and ADC $\Delta$ 





Exercise 2.2

- 1. In the following parallelogram ABCD in the figure, AB//DC and DA//BC and AB = DC. In the foll AX//YB and AX = YB. Show that the straight lines AB and YX bisect each other at P.
  - I ) Show that ATB  $\Delta \equiv$  DTC  $\Delta$ .
  - II) Show that the diagonals of parallelogram ABCD bisect each other.



- 2. In the shown figure O is the center of the circle. A, B,C and D are the points marked on the circle.
  - I) Show that AOB  $\Delta \equiv \text{DOC } \Delta$
  - II) Show that AB//DC



# Area

Exercise 3.1

I)

1. Find the area of each sector.



2. Find the radius of each sector.



Area = 231cm<sup>2</sup>

3. Find the angle at the centre of each sector.

r









II)

θθ



Area = 
$$231$$
 cm<sup>2</sup>

$$Area = 462 cm^2$$

Exercise 3.2

1. The figure denotes a wall decoration consisting of two rectangles ABOC and FEDO and two sectors of a circle COD and BOF which the center is O. Prove that the area of the wall decoration is  $427 \text{ cm}^2$ 

