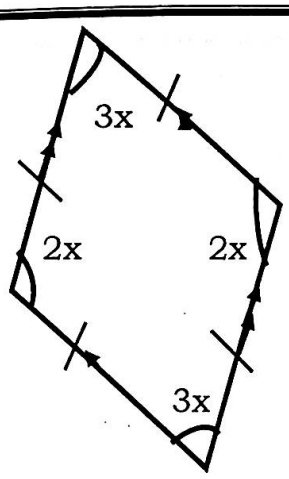
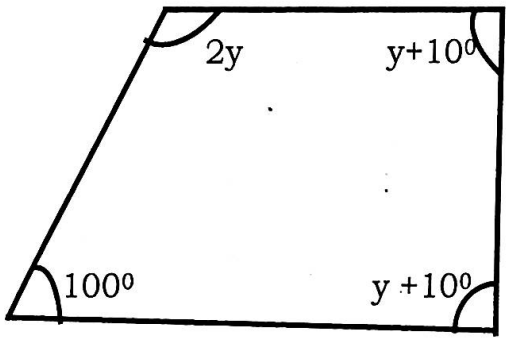
d)



e)



Lesson 55: Finding the number of sides of regular polygon.

- *State the correct formula for finding number of sides of a regular polygon when exterior angle is given directly.*
- *Substitute correctly and operate accurately.*
- *Give the obtained number of sides.*

Example1: *The exterior angle of a regular polygon is 72^0. How many sides has the polygon?*

Number of sides $= \frac{\text{Sum of all exterior angles}}{\text{One exterior angle.}}$

Number of sides $= \frac{360^0}{72}$

$=$ **5 sides.**

Example II: *The interior angle of a regular polygon is 135⁰. Find the number of sides the polygon has.*

Exterior angle = interior ∠ + exterior ∠ = 180⁰

135⁰ + ext = 180⁰

ext = 180⁰ - 135⁰

ext = 45⁰

Number of sides = $\frac{\text{sum of all exterior } \angle s}{\text{one exterior}}$

Number of sides = $\frac{360^0}{45^0}$

= **8 sides.**

Learner's activity.

1. *How many sides has a polygon whose exterior angle is 40⁰?*

2. *Calculate the number of sides of a regular polygon whose exterior angle is 60⁰.*

3. *Find the number of sides of a regular polygon whose interior angle is 120⁰.*

4. *Calculate the number of sides a regular polygon has whose interior angle is 150⁰.*