

CLASS-X

MATHEMATICS

AREAS RELATED TO CIRCLES

HANDOUT MODULE – 1/2

1. If r is the radius of a circle, then

(i) Circumference = $2\pi r$

$$= \pi d \text{ (where, } d = 2r)$$

(ii) Area = πr^2

$$= \pi d^2/4$$

2. If R and r are radii of two concentric circles, then

$$\text{Area enclosed by two circles (ring)} = \pi R^2 - \pi r^2$$

$$= \pi(R+r)(R-r)$$

3. Length of an arc of a sector of a circle with radius r and angle with

degree measure $\theta = \frac{\theta}{360^\circ} \times 2\pi r$

4. Area of a sector of a circle with radius r and angle with degree measure

$$\theta = \frac{\theta}{360^\circ} \times \pi r^2$$

5. Area of a segment of a circle with radius r and central angle with degree measure $\theta =$ Area of the corresponding sector – Area of the

corresponding triangle = $\frac{\theta}{360^\circ} \times \pi r^2 - r^2 \sin\theta/2$