MATHEMATICS

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AIM POINTS
MATHEMATICS
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&
COMPATETIVE EXAM FOR XI (PQRS)

THINGS & REMEMBER AND MEASUREMENT OF ANGLES

MEASUREMENT OF ANGLES

1. Meaning of π or prove that $c = 2\pi r$

2. Show that the redian is a constant angel.

3. Prove that $1^c = \dfrac{180^0}{\pi}$

   Or, Relation between degrees and Radian.

4. Prove that $\theta = \dfrac{1}{r}$

   Or, Relation between Arc, radius and angle.

5. Write the sign.

   (i)   Sin 1280^0 (ii)   Cos 1850^0 (iii) tan 1950^0 (iv) Cos 2011^0

6. Convert into radius:

   (i) $40^0\ 20^0$ (ii) $11^0/16$ (iii) -4^0 (iv) $70^0/6$

   (iv) $(2.64)^0$

7. Convert into radius:

   (i) $42^0\ 57^0\ 16^0$ (ii) $72^0\ 53^0\ 51^0$ (iii) $41^0\ 22^0\ 50^0$

8. Convert into degree.

   (ii) $(2.64)^0$ (ii) $7\pi^0/c$ (iii) -4^0 (iv) $11/16$

9. $65^0\ 24^0\ 16^0$ change in circular degree.

10. Find the angle a between hour-hand and minute-hand in circular measure at 4 O'clock.

11. Find the angle between hour-hand and minute hand in circular measure at 3½ O' clock.

12. In a circle of diemeter 40cm, the legth of a chord is 20cm. Find the length of minor are of the chord.

13. The minute hand of a watch is 1.5cm long. How for does its tip move in:

14. If the across of same length in two circles. Subtend angles of 75^0 and 120^0 at their respective centre, find the ratio of their radii.

15. A wheel makes 360 revolutions in one minute. Though how many radians does it term in one second?

16. Find the angle in radian through which a pendulum swings if its length is 75cm. and the tip describes an arc of length.

   (i)   10cm.   (ii)   15cm.   (iii)   21cm.

17. The difference between the two acute angles of a right angled triangle is $2\pi/5$ radian.

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$Sec(180+\theta)=-sec\theta$

$Cosec(180+\theta)=-cosec\theta$

8. (i) $Sin(270-\theta)=-Cos\theta$

$Cos(270-\theta)=-Sin\theta$

$tan(270-\theta)=cot\theta$

$cot(270-\theta)=tan\theta$

$sec\theta(270-\theta)=-cosec\theta$

$cosec(270-\theta)=-sec\theta$

9. (i) $Sin(270+\theta)=-Cos\theta$

$Cos(270-\theta)=Sin\theta$

$tan(270+\theta)=-cot\theta$

$cot(270+\theta)=-tan\theta$

$Sec(270+\theta)=cosec\theta$

$Cosec(270+\theta)=-sec\theta$

10. (i) $Sin(360-\theta)=-Sin\theta$

$Cos(360-\theta)=Cos\theta$

$tan(360-\theta)=-tan\theta$

$cot(360-\theta)=-cot\theta$

$Sec(360-\theta)=sec\theta$

$Cosec(360-\theta)=-cosec\theta$

11. (i) $Sin(360+\theta)=Sin\theta$

$Cos(360+\theta)=Cos\theta$

$tan(360+\theta)=tan\theta$

$cot(360+\theta)=cot\theta$

$Sec(360+\theta)=sec\theta$

$Cosec(360+\theta)=cosec\theta$

(ii)   TRIGONOMETRICAL funcation is changeable at degree 90^0 & 270^0.

(iii)   Trigonometrical function is not changeable at degree 180^0 & 360^0.

3. (i) $\text{Sin}(-\theta) = -\text{Sin}\theta$

        $\text{Cos}(-\theta) = \text{Cos}\theta$

        $\tan(-\theta) = -\tan\theta$

        $\cot(-\theta) = -\cot\theta$

        $\text{Sec}(-\theta) = \text{Sec}\theta$

        $\text{Cosec}(-\theta) = -\text{Cosec}\theta$

4. (i) $\text{Sin}(90+\theta) = \text{Cos}\theta$

        $\text{Cos}(90-\theta) = -\text{Sin}\theta$

        $\tan(90+\theta) = -\cot\theta$

        $\cot(90+\theta) = -\tan\theta$

        $\text{Sec}(90+\theta) = -\text{cosec}\theta$

        $\text{Cosec}(90+\theta) = +\text{sec}\theta$

5. (i) $\text{Sin}(90-\theta) = \text{Cos}\theta$

        $\text{Cos}(90-\theta) = \text{Sin}\theta$

        $\tan(90-\theta) = \cot\theta$

        $\cot(90-\theta) = \tan\theta$

        $\sec\theta(90-\theta) = \text{cosec}\theta$

        $\text{cosec}(90-\theta) = \sec\theta$

6. (i) $\text{Sin}(180-\theta) = \text{Sin}\theta$

        $\text{Cos}(180-\theta) = -\text{Cos}\theta$

        $\tan(180-\theta) = -\tan\theta$

        $\cot(180-\theta) = -\cot\theta$

        $\text{Sec}(180-\theta) = -\sec\theta$

        $\text{Cosec}(180-\theta) = \text{cosec}\theta$

7. (i) $\text{Sin}(180+\theta) = -\text{Sin}\theta$

        $\text{Cos}(180+\theta) = -\text{Cos}\theta$

        $\tan(180+\theta) = \tan\theta$

        $\cot(180+\theta) = \cot\theta$

THINGS TO REMEMBER

1. (i) $\quad \pi^c = 180^0$ $\qquad\qquad$ C=Radian=Circular angle

   (ii) $\quad 1^0 = \dfrac{\pi^c}{180}$ $\qquad\qquad$ 1^1=1 minute

   (iii) $\quad 1^c = \dfrac{180^0}{\pi}$ $\qquad\qquad$ 1^{11}=1 second

   (iv) $\quad 1^0 = 60^1$ $\qquad\qquad$ D=Degree

   (v) $\quad 1^1 = \dfrac{1^0}{60}$ $\qquad\qquad$ R=Radian

   (vi) $\quad 1^0 = (3600)^{11}$ $\qquad\qquad$ G=Gread

   (vii) $\quad 1^{11} = \left(\dfrac{\pi^c}{180}\right)$ $\qquad\qquad$ Right Angle = समकोण

   (viii) $\quad \dfrac{D}{180} = \dfrac{C}{\pi}$

   (ix) $\quad 90^0$= Right angle=100^g

   (x) $\quad \dfrac{D}{90} = \dfrac{G}{100} = \dfrac{2R}{\pi}$

   (xi)

Degree	30^0	45^0	60^0	900^0	180^0	270^0	360^0
Radians	$\pi/6$	$\pi/4$	$\pi/3$	$\pi/2$	π	$3\pi/2$	2π

2. (i)