



MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

MEASUREMENT OF ANGLES

Solved Examples

1. Find the degree measure corresponding to

each of the following radian measures.

$$(i) \left(rac{7\pi}{12}
ight)^c (ii) \left(rac{3}{4}
ight)^c (iii) (-2)^c$$



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2. Find the radian measure corressponding to

each of the following degree measure:

$$15^{\circ}$$

A.

$$\left(\frac{\pi}{12}\right)^c$$

B.

$$\left(\frac{\pi}{10}\right)^c$$

$$\left(\frac{\pi}{6}\right)^c$$

D.

$$(\pi)^c$$

Answer: A



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3. Find in degrees the angle subtended at the centre of a circle of diameter 50 cm by an arc of length 11 cm.

4. Find the radius of a circle in which a central angle of 72° intercept an arc of length of 22cm. (Use $\pi=\frac{22}{7}$).



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5. The minute hnad of a watch is 1.4cm long. How far does its tip more in 45 minutes? (Use $\pi = \frac{22}{7}$).

6. If the arcs of the same length in two circles subtend angles of 60° and 75° at their respective centres, find the ratio of their radii?



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7. The angles of a triangle are in AP and the ratio of the number of degrees in the least to the number of radians in the greatest is $60:\pi$. Find the angles in degree and radians.

8. In a right-angled triangle, the difference between the two acute angles is $\left(\frac{\pi}{15}\right)^c$. Find the angle in degrees.



9. A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second?

10. Find the angle between the minute hand and the hour hand of a clock at 7.20 am



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11. A horse is tied to a post by a rope. If the horse moves along a circular path always keeping the rope tight, and describes 88 metres when it traces 72° at the centre, find the length of the rope.

Exercise 14

1. Using a protractor, draw each of the following angles.

(i) 60° , (ii) 130° , (iii) 300° , (iv) 430°

(v) -40° , (iv) -220° , (vii) -310° , (viii) -400°



2. Express each of the following angles in radians.

(i)
$$36^{\circ}$$
 , (ii) 120° , (iii)) 225° , (iv) 330°

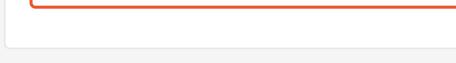
(v)
$$400^{\circ}$$
, (iv) $7^{\circ}30'$, (vii) -270° , (viii)

$$-\left(22^{\,\circ}\,30\,'\right)$$



3. Express each of the following angles in degrees.

(i)
$$\left(\frac{5\pi}{12}\right)^c$$
, (ii) $-\left(\frac{18\pi}{5}\right)^c$, (iii) $\left(\frac{5}{6}\right)^c$, (iv) -4^c



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4. The angles of a triangle are in AP and the greatest is double the least. Find all the angles in degrees and radians.



5. The difference between the two acute angles of a right triangleis $\left(\frac{\pi}{3}\right)^c$.

Find these angles in radians and degrees.



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6. Find the radius of a circlein which a central angle of 45° intercepts an arc of length 33cm.

(Take
$$\pi=rac{22}{7}$$
.)



7. The length of an arc of a radius of 14 cm which subtends an angle of 36° at the ends centre is

A. 8.4cm

B. 4.8cm

 $\mathsf{C.}\,8.8cm$

D. 7.8cm

Answer: C



8. If the arc of the same length in two circles subtend angles 75° and 120^{o} at the centre, find the ratio of their radii.

- A. 8:5
- B.7:5
- C.8:7
- D. 3:5

Answer: A



9. Find tge degree measure of the angle subtended at the centre of a circle of diameter 60 cm by an arc of length 16.5 cm.



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10. In a circle of diameter 30 cm, the length of a chord is 15 cm. Find the length of the minor arc of the chord.



11. The measure of angle in degrees through which a pendulum swings if its length is 45 cm and its tip describes an arc of length 11 cm.

- A. 20°
- B. 18°
- $\mathsf{C}.\,16^\circ$
- D. 14°

Answer: D



12. The large hand of a clock is 42 cm long. How many centimetres does its extremity move in 20 minutes.



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13. A wheel makes 180 revoluations in 1 minutes. Through how many radians does it turn in 1 second?

A. $(12\pi)^c$

B. $(6\pi)^{c}$

C. $(4\pi)^c$

D. $(8\pi)^c$

Answer: B



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14. A railway train is travelling on a circular curve of 1500 metres radius at the rate of 66km/hr. Through what angle has it turned in 10 seconds?



15. A wire of length 121 cm is bent so as to lie along the arc of a circle of radius 180 cm. Find in degrees, the angle subtended at the centre by the arc.



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16. The angles of a quadrilateral are in AP, and the greatest angle is double the least. Express the least angle in radians.



