MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

MEASUREMENT OF ANGLES

Solved Examples

1. Find the degree measure corresponding to each of the following radian measures.

$(i)\left(\frac{7\pi}{12}\right)^c \quad (ii)\left(\frac{3}{4}\right)^c \quad (iii)(-2)^c$

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2. Find the radian measure corressponding to each of the following degree measure :

15°

A.

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

B.

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

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.

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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 45minutes ? (Use $\pi = \frac{22}{7}$).

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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.

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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.

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

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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.

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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°

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2. Express each of the following angles in radians.

(i) 36° , (ii) 120° , (iii)) 225°, (iv) 330°

(v) 400°, (iv) $7^\circ 30'$, (vii) -270° , (viii) $-(22^\circ 30')$

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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.

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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 $\pi = \frac{22}{7}$.)

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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. $4.8cm$

C. $8.8cm$

D. $7.8cm$

Answer: C

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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

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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.

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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°

C. 16°

D. 14°

Answer: D

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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?

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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.

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