



MATHS

BOOKS - RD SHARMA MATHS (ENGLISH)

MEASUREMENT OF ANGLES

Others

1. Find in degrees the angle through which a pendulum swings if its length is 50cm and the

tip describes an arc of length 10cm .



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2. A circular wire of radius 7.5cm is cut and bent so as to lie along the circumference of a hoop whose radius is 120cm . Find in degrees the angle which is subtended at the centre of the hoop.



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3. The angles of a triangle are in AP . The number of degrees in the least is to the number of radians in the greatest as $60:\pi$. Find the angles in degrees.



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4. If in two circles, arcs of the same length subtend angles 60° and 75° at the centre, find the ratio of their radii.



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5. Find the radian measures corresponding to the following degree measures: 3400 (ii) 750 (iii) $-370^{\circ} 30'$ (iv) $50^{\circ} 37' 30''$ (v) $400^{\circ} 20'$ (vi) 5200



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



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7. Find the degree measure corresponding to

the following radian measures: $\left(\frac{2\pi}{15}\right)^c$ (ii)

$\left(\frac{\pi}{8}\right)^c$ (iii) $\left(\frac{1}{4}\right)^c$ (iv) 2^c (v) 6^c (vi) $\left(\frac{11}{16}\right)^c$



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8. A proton is moving along the negative direction of X-axis in a magnetic field directed along the positive direction of Y-axis. The

proton will be deflected along the negative direction of



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



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10. A rail road curve is to be laid out on a circle. What radius should be used if the track

is to change direction by 25° in a distance of 40 metres ?



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11. Find the magnitude, in radians and degrees, of the interior angle of a regular (i) pentagon (ii) octagon (iii) heptagon (iv) duodecagon.



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12. If D , G and R denote respectively the number of degrees, grades and radians in an

angle, then (a) $\frac{D}{100} = \frac{G}{90} = \frac{2R}{\pi}$ (b)

$\frac{D}{90} = \frac{G}{100} = \frac{R}{\pi}$ (c) $\frac{D}{90} = \frac{G}{100} = \frac{2R}{\pi}$ (d)

$\frac{D}{90} = \frac{G}{100} = \frac{R}{2\pi}$



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13. The moons distance from the earth is $360,000\text{kms}$ and its diameter subtends an

angle of $31'$ at the eye of the observer. Find the diameter of the moon.



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14. If the angular diameter of the moon be $30'$, how far from the eye a coin of diameter 2.2 cm be kept to hide the moon?



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15. Find the length of an arc of a circle of radius 5 cm subtending a central angle measuring 15° .



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16. The angles of a triangle are in A.P. The number of grades in the least, is to be number of radians in the greatest as $40:\pi$. Find the angles in degrees.



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17. Express the angular measurement of the angle of a regular decagon in the degrees and radians.



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18. 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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19. Assuming that a person of normal sight can read print to such distance that the letters subtend an angle of $5'$ at his eye, find the height of the letters that he can read at a distance of 12 metres.



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20. The perimeter of a certain sector of a circle is equal to the length of the arc of semi circle having the same radius. Express the angle of the sector in degrees, minutes and seconds.



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21. The minute hand of watch is 1.5 cm long. How far does its tip move in 40 minutes?



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22. Find the degrees and radians the angle between the hour hand and the minute hand of a clock at half past three.



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23. Find the degree measure corresponding to the radian measure $\frac{9\pi}{5}$ (Use $\pi = \frac{22}{7}$)



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24. Find the degree measure corresponding to the radian measure $-\frac{5\pi}{6}$



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25. Find the degree measure corresponding to the following radian measure $\frac{18\pi}{5}$



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26. Find the degree measure corresponding to the following radian measure -3^c Use

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



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27. Find the degree measure corresponding to the following radian measure 1^c Use $\pi = \frac{22}{7}$



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28. Find the radian measures corresponding to the following degree measure: 300°



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29. Find the radian measures corresponding to the following degree measure: 35°



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30. Find the radian measures corresponding to the following degree measure: -56°



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31. Find the radian measures corresponding to the following degree measure: 135°



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32. Find the radian measures corresponding to the following degree measure: $70^{\circ} 30'$



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33. Find the radian measures corresponding to the following degree measure: $30^{\circ} 25'$



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34. Find the radian measures corresponding to the following degree measure: $-47^{\circ} 30'$



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35. The difference between the two acute angles of a right angled triangle is $\frac{2\pi}{5}$ radians. Express the angles in degrees.



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36. One angle of a triangle is $\frac{2}{3}x$ grades and another is $\frac{3}{2}x$ degrees while the third is $\frac{\pi x}{75}$ radians. Express all the angles in degrees.



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37. The angles of a quadrilateral are in A.P. and the greatest angle is 120° . Express the angles in radians.



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38. The angles of a triangle are in A.P. and the number of degrees in the least angle is to the number of degrees in the mean angle as 1:120. Find the angles in radians.



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39. The angle in one regular polygon is to that in another as 3:2 and the number of sides in first is twice that in the second. Determine the number of sides of two polygons.



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40. The number of sides of two regular polygons are as 5: 4 and the difference between their angles is 9° . Find the number of sides of the polygons



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41. Find the length which at a distance of 5280 m will subtend an angle of $1'$ at the eye.



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42. A wheel makes 360 revolutions per minute. Through how many radians does it turn in 1 second?



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43. Find the angle in radian through which a pendulum swings if its length is 75 cm and the tip describes an arc of length (i) 10 cm (ii) 15 cm (iii) 21 cm



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44. The radius of a circle is 30 cm. find the length of an arc this circle, if the length of the chord of the arc is 30 cm.



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45. 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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46. Find the distance from the eye at which a coin of 2 cm diameter should be held so as to conceal the full moon whose angular diameter is $31'$.



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47. Find the diameter of the sun in km supposing that it subtends an angle of $32'$ at

the eye of an observer. Given that the distance of the sun is 91×10^6 km.



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48. If the arcs of the same length in two circles subtend angles 65° and 110° at the centre, find the ratio of their radii.



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49. Find the degree measure of the angles subtended at the centre of a circle of radius 100 cm by an arc of length 22 cm (*Use* $\pi = 22/7$).



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50. If the angles of a triangle are in A.P., then the measures of one of the angles in radians is

A. $\frac{\pi}{6}$

B. $\frac{\pi}{3}$

C. $\frac{\pi}{2}$

D. $2\frac{\pi}{3}$

Answer: B



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51. The angle between the minute and hour hands of a clock at 8:30 is

A. 75°

B. 80°

C. 105°

D. 60°

Answer: A



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52. At 3:40 the hour and minute hands of a clock are inclined at

A. $\frac{13\pi}{18}$

B. $2\frac{\pi}{3}$

C. $\frac{5\pi}{18}$

D. None Of These

Answer: A



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53. If the arcs of the same lengths m in two circles subtend angles 65° and 110° at the centre, find the ratio of their radii.



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54. if OP makes 4 revolutions in one second, the angular velocity in radians per second is?



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55. A circular wire of radius 7cm is cut and bend again into an arc of a circle of radius 12cm angle subtended by the arc at the centre is



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56. The radius of the circle whose arc of length 15π cm makes an angle of $\frac{3\pi}{4}$ radians at the centre is

A. 5 cm

B. 10 cm

C. 15 cm

D. 20 cm

Answer: D



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