Edulyte

ARC LENGTH FORMULA

Arc Length: The arc length and area of segments in geometry correspond to portions of a circle in geometry. The measurement of distance that lies along the curved line of a circular arc or a portion of a curve is called an arc length. You can calculate the length of an arc (s) of a circle with radius (r) and a subtending angle (θ) in radians, by making use of the following formula:

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Q1: What is the arc length formula for a circle with radius 'r' and central angle 'θ' (in radians)?

A: θ × r
B: 2πr
C: θr
D: πr^2

Q2: What is the arc length of a semicircle with a radius of 8 cm?

A: 4π cm
B: 8 cm
C: 16 cm
D: 4 cm

Q3: Which value must you use to calculate arc length if the central angle is given in degrees?

A: 360
B: 2π
C: π
D: 180

Q4: Find the arc length of a circle of radius 10 cm and subtending angle of π/4 radians.

A: 15 cm
B: 25 cm
C: 5 cm
D: 10 cm

Q5: Find the arc length of a semicircle of radius 12 m.

A: 6 m
B: 24 m
C: 18 m
D: 72 m

Q6: What value is used to convert the central angle of a circle from degrees to radians?

A: 90
B: 120
C: 360
D: 180

Q7: What is the formula for calculating the arc length of a circle?

A: πr^2
B: s = rθ
C: 2πr
D: πr

Q8: What is the formula for calculating the area segment of a circle?

A: A= 1/2r^2 [θ - sin (θ)]
B: A= πr^2
C: A= 2πr
D: A= rθ

Q9: Find the area of a semicircular garden of radius 10 meters.

A: 20 square meters
B: 50π square meters
C: 50 square meters
D: 100 square meters

Q10: Find the area of a circle with a segment of radius 6 cm and a subtending angle of π/3 radians.

A: 2 cm^2
B: 7 cm^2
C: 10 cm^2
D: 3 cm^2

Answers

Q1: A - θ × r

Q2: B - 8 cm

Q3: D - 180

Q4: C - 5 cm

Q5: A - 6 m

Q6: D - 180

Q7: B - s = rθ

Q8: A - A= 1/2r^2 [θ - sin (θ)]

Q9: C - 50 square meters

Q10: D - 3 cm^2