King Fahd University of Petroleum and Minerals

Prep-Year Math Program

Math 002 - Term 151

Recitation (6.2)

Question1: The arc length of 200π cm subtends a central angle of $300°$ in a circle of radius r. The radius r is equal to

A) 120 cm

B) $\frac{2\pi}{3}$ cm

C) 180 cm

D) 150 cm

E) $\frac{3}{2\pi}$ cm

Answer: $r = 120$ cm

Question2: Find the exact value of: $\cos\left(\frac{3\pi}{4}\right)\tan\left(\frac{4\pi}{3}\right) - \cos\left(\frac{11\pi}{6}\right)$ **Answer:** $\frac{-\sqrt{6}-\sqrt{3}}{2}$

Question3: The tires on a bicycle have radius 30 cm and rotating at the rate of 300 revolutions per minute. The speed of the bicycle in centimeters per second is

A) 300π
B) 1800π
C) 600
D) 400π
E) 1200

Answer: 300π

Question4: The front wheel of a bicycle has a radius of 20 inches and the back wheel has a radius of 30 inches. If the linear speed of the bicycle is 150 inches per second, then the sum of the angular speeds of the two wheels is

A) 60 radians per second
B) 10 radians per second
C) 5 radians per second
D) 12.5 radians per second
E) 15 radians per second

Answer: $12.5\frac{radian}{\sec}$

Question 5:

$\sin 10 =$

A) $-\sin(10-3\pi)$
B) $\sin(10-3\pi)$
C) $\sin 80°$
D) $-\sin 80°$
E) $\cos(10-3\pi)$