

NAME: _____

P.I. A2.S.13: Calculate theoretical probabilities, including geometric applications

1. You have 10 dowels that range in circumference from $\frac{1}{2}$ in. to 5 in. with $\frac{1}{2}$ in. increments. If you choose a dowel at random, what is the probability that it will go through a hole in a piece of wood that is 1 in. in diameter?

[A] 1 [B] $\frac{3}{5}$ [C] 0
[D] $\frac{1}{2}$ [E] not given

2. Two concentric circles have radii of 12 and 26 cm. Find the probability that a point chosen at random from the circles is located outside the smaller circle and inside the larger one.

[A] 4.7% [B] 92.4%
[C] 21.3% [D] 78.7%

3. A wishing well is 6 ft in diameter. Centered at the bottom of the well is a bucket that is 1 ft in diameter. If you drop a coin in the well without looking, what is the probability it will land in the bucket?

4. A circular dartboard drawn on a coordinate system consists of three concentric circles centered at $(2, -1)$. The center circle and outer ring are shaded and the middle one is white. If the first circle contains $(2, 2)$, the second contains $(2, 5)$, and the third contains $(2, 8)$, what is the probability that a dart thrown at the dartboard by a blindfolded person will hit the white ring if it hits the dartboard?

[1] B

[2] D

[3] $\frac{1}{36}$

[4] $\frac{1}{3}$