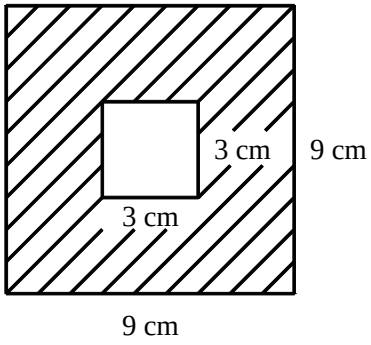
NAME:_____

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

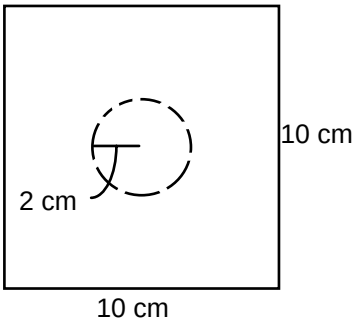
1. Suppose you throw 10 darts randomly at the dart board below and that all darts hit the board. Find the probability of landing in the shaded region.



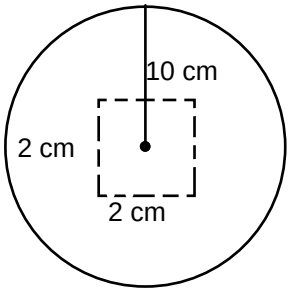
[A] 9 [B] $\frac{1}{9}$ [C] $\frac{9}{8}$ [D] $\frac{8}{9}$

2. Compare the quantity in Column A with the quantity in Column B.
Here are two different dart boards, A and B. The dashed line shows the target region of each. One dart is thrown at random at each board. What is the probability that the dart will land in the target area?

Column A



Column B



[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

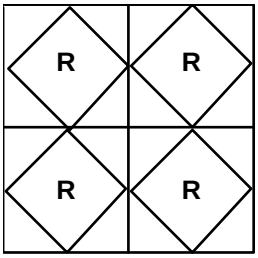
[C] The quantities are equal.

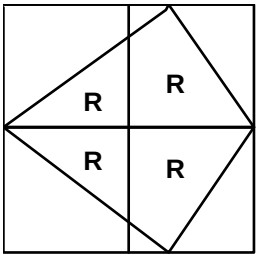
[D] The relationship cannot be determined on the basis of the information supplied.

NAME:_____

3. Compare the quantity in Column A with the quantity in Column B.

Column A	Column B
the probability of landing on red:	the probability of landing on red:



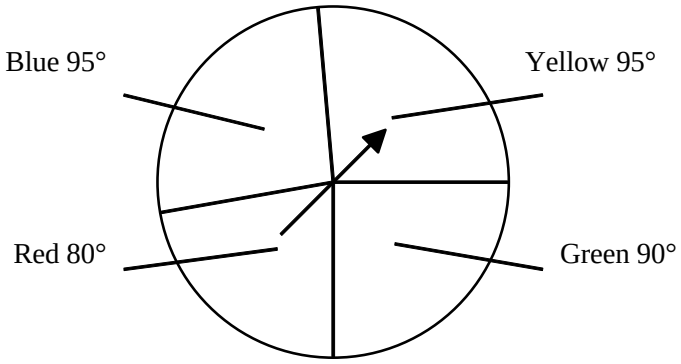


[A] The quantity in Column A is greater. [B] The quantity in Column B is greater.

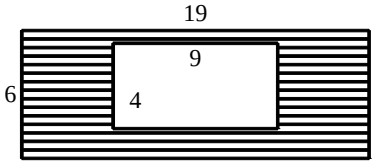
[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

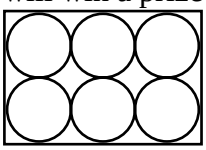
4. What is the probability that the next spin on the game spinner will be blue? Round your answer to the nearest hundredth.



5. If a point is selected at random, what is the probability that it will lie within the shaded rectangular region rather than the unshaded rectangular region?



6. A box is packed with six unopened cans. You win a prize if you drop a ball and it falls between the cans into the box. Assume that if a ball hits a can, it does not fall into the box. What is the probability you will win a prize? Would your chances improve with more or fewer cans packed in the same way?



[1] D

[2] A

[3] C

[4] 0.26

[5] $\frac{13}{19}$

[6] 0.215; no, the probability remains the same for any similar configuration of cans