

NAME: \_\_\_\_\_

*P.I. A2.S.15: Know and apply the binomial probability formula to events involving the terms exactly, at least, and at most*

1. A survey shows that 35% of the adults in a community read a local newspaper. Suppose 8 adults from the community are selected. Which probability has the greatest value?

[A]  $P(\text{between 4 and 7 of the people read a local newspaper})$   
[B]  $P(\text{at least 2 of the 8 people read a local newspaper})$   
[C]  $P(\text{at most 3 of the 8 people read a local newspaper})$   
[D]  $P(\text{exactly 3 of the 8 people read a local newspaper})$

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

A rare plant has a 30% survival rate after 1 month. Ten plants are selected at random.

Column A

Column B

$P(\text{exactly 4 plants survive})$      $P(\text{at least 5 plants survive})$

[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.

3. Quality control at a factory determined that 95% of the light bulbs produced passed inspection. Find the probability that in a random sample of 5 bulbs no more than two will fail inspection.

4. You work at a T-shirt printing business. 3% of 2800 T-shirts shipped are printed improperly. If you randomly select 100 T-shirts (selecting a T-shirt and replacing it), what is the probability that at least one of them is printed improperly?

[A] 0.952                      [B] 0.948                      [C] 0.548                      [D] 0.048

[1] B

[2] A

[3] 0.9988

[4] A