AP STATISTICS: Worksheet Chapter 8 **Name** _____

THE TWELVE DAYS OF CHRISTMAS

On the first day of Christmas, my true love gave to me: A Partridge in a Pear Tree.

If the probability of getting a partridge is 0.58 and the probability of getting a pear tree is 0.76, and these are independent events, find the probability of getting a partridge and a pear tree. _____

On the second day of Christmas, my true love gave to me: Two Turtle Doves.

If the probability of a female turtle dove is 0.53, find the probability of at least one female turtle dove in the pair. _____

On the third day of Christmas, my true love gave to me: Three French Hens.

If the probability of a hen truly having French citizenship is 0.81, find the probability of exactly two French hens out of the three. _____

On the fourth day of Christmas, my true love gave to me: Four Calling Birds.

If there is an infinite number of calling birds and the probability of a bird actually calling is 0.63, find the probability of finding the first calling bird on the third attempt. _____

On the fifth day of Christmas, my true love gave to me: Five Golden Rings.

If the probability of getting a real golden ring is 0.72, find the probability of getting three or fewer golden rings in the five. _____

On the sixth day of Christmas, my true love gave to me: Six Geese A-laying.

If the probability of an authentic laying goose is 0.83 and there is an unlimited number of geese, find the probability of getting a laying goose on or before the fourth trial. _____

On the seventh day of Christmas, my true love gave to me: Seven Swans A-swimming.

If the probability of a swan drowning is 0.23, find the probability of exactly 4 out of the 7 swans drowning.

_____

On the eighth day of Christmas, my true love gave to me: Eight Maids A-milking.

If the probability of getting a sour maid a-milking is 0.38, find the expected number of sour maids a-milking in the group of 8.

_____

On the ninth day of Christmas, my true love gave to me: Nine Ladies Dancing.

If the probability of a dancing lady accepting an invitation to dance is 0.18, find the expected number of ladies you would have to ask before one accepts.

_____

On the tenth day of Christmas, my true love gave to me: Ten Lords A-leaping.

If the probability of a lame leaping lord is 0.24 and there is an unlimited number of leaping lords, find the probability of getting your first lame leaping lord after the sixth attempt.

_____

On the eleventh day of Christmas, my true love gave to me: Eleven Pipers Piping.

If the probability of frozen pipes is 0.63, find the probability of 8 or more frozen pipes out of the eleven.

_____

On the twelfth day of Christmas, my true love gave to me: Twelve Drummers Drumming.

If the probability of a dribbling drummer is 0.48, find the standard deviation of the dribbling drummers drumming for twelve drummers drumming.

_____

If you round all answers to three significant digits, the sum of the twelve answers should be 14.0479.

AP STATISTICS: Worksheet Chapter 8 **Name** _____

THE TWELVE DAYS OF STATISTICS

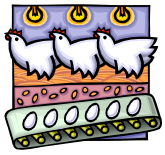
On the first day of Statistics, my true love gave to me: A Partridge in a Pear Tree.

If the probability of getting a partridge is 0.58 and the probability of getting a pear tree is 0.76, and these are independent events, find the probability of getting a partridge and a pear tree. _____

On the second day of Statistics, my true love gave to me: Two Turtle Doves.

If the probability of a female turtle dove is 0.53, find the probability of at least one female turtle dove in the pair. _____

On the third day of Statistics, my true love gave to me: Three French Hens.

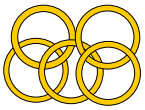


If the probability of a hen truly having French citizenship is 0.81, find the probability of exactly two French hens out of the three. _____

On the fourth day of Statistics, my true love gave to me: Four Calling Birds.

If there is an infinite number of calling birds and the probability of a bird actually calling is 0.63, find the probability of finding the first calling bird on the third attempt. _____

On the fifth day of Statistics, my true love gave to me: Five Golden Rings.



If the probability of getting a real golden ring is 0.72, find the probability of getting three or fewer golden rings in the five. _____

On the sixth day of Statistics, my true love gave to me: Six Geese A-laying.

If the probability of an authentic laying goose is 0.83 and there is an unlimited number of geese, find the probability of getting a laying goose on or before the fourth trial. _____

On the seventh day of Statistics, my true love gave to me: Seven Swans A-swimming.

If the probability of a swan drowning is 0.23, find the probability of exactly 4 out of the 7 swans drowning.

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On the tenth day of Statistics, my true love gave to me: Ten Lords A-leaping.

If the probability of a lame leaping lord is 0.24 and there is an unlimited number of leaping lords, find the probability of getting your first lame leaping lord after the sixth attempt.

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On the eleventh day of Statistics, my true love gave to me: Eleven Pipers Piping.

If the probability of frozen pipes is 0.63, find the probability of 8 or more frozen pipes out of the eleven.

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On the twelfth day of Statistics, my true love gave to me: Twelve Drummers Drumming.

If the probability of a dribbling drummer is 0.48, find the standard deviation of the dribbling drummers drumming for twelve drummers drumming.

_____

If you round all answers to three significant digits, the sum of the twelve answers should be 14.0479.

I have students write answers to three significant digits

1. 0.58 x 0.76 = 0.441
2. $P(X \geq 1) = 1 - P(X = 0) = 1 - 0.47^2 = 0.779$
3. P(X = 2) = binompdf(3,0.81,2) = 0.374
4. P(X = 3) = geometpdf(0.63,3) = 0.0862
5. $P(X \leq 3)$ = binomcdf(5,0.72,3) = 0.430
6. $P(x \leq 4)$ = geometcdf(0.83,4) = 0.999
7. P(X = 4) = binompdf(7,0.23,4) = 0.0447
8. $\mu = np = 8(0.38) = 3.04$
9. $\mu = 1/p = 1/0.18 = 5.56$
10. P(X > 6) = 1 – geometcdf(0.24,6) = 0.193
11. $P(x \geq 8)$ = 1 – binomcdf(11,0.63,7) = 0.371
12. $\sigma = \sqrt{np(1-p)} = \sqrt{12(0.48)(0.52)} = 1.73$

This worksheet was originally created by Jim Luhring.