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Note: You will only be allowed to submit this test one time. Your score will be averaged in your overall course grade and you will not be able to submit this test again.

MA170G.07

1 of 25
Write the sample space for the given experiment.

A box contains 10 red cards numbered 1 through 10. One card is drawn at random.

- ○ {10}
- ⊗ {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
- ○ {1, 10}
- ○ {100}

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Evaluate the expression.

$12C_0$

- ○ 12
- ○ 11
- ○ 39,916,800
- ○ 1

3 of 25
If 5 apples in a barrel of 25 apples are rotten, what is the expected number of rotten apples in a sample of 2 apples?

- ○ .4
- ○ .63
- ○ .33
- ○ 1

4 of 25
Let U = {all soda pops}; A = {all diet soda pops}; B = {all cola soda pops}; C = {all soda pops in cans}; and D = {all caffeine-free soda pops}. Describe the given set in words.

$(A \cup D) \cap C'$

- ○ All diet, caffeine-free soda pops not in cans
- ○ All non-diet, non-caffeine-free soda pops not in cans
- ○ All non-cola soda pops not in cans
- ○ All soda pops not in cans that are diet or caffeine-free

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Convert the odds that the given event will occur to the probability that the event will occur.

The odds in favor of winning a particular lottery are 1 to 2,000,000.

- 1/2,000,001
- 2,000,000/2,000,001
- 1/1,999,999
- 1/2,000,000

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Insert "$\subseteq$" or "$\not\subseteq$" in the blank to make the statement true.

{ 7, 9, 11} {x | x is an odd counting number}

- $\subseteq$
- $\not\subseteq$

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Prepare a probability distribution for the experiment. Let x represent the random variable, and let P represent the probability.

Two balls are drawn from a bag in which there are 4 red balls and 2 blue balls. The number of blue balls is counted.

x	P
0	.4
1	.53
2	.07
x	P
0	.333
1	.333
2	.333
x	P
0	.719
1	.280
2	.001
x	P
0	.07
1	.53
2	.4

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In a certain animal species, the probability that a female will have 0, 1, 2, 3, or 4 offspring in a given year is .31, .21, .19, .17, and .12 respectively. Find the expected number of offspring

- 1.38
- 1.58
- 1.75
- 2

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Find the number of subsets of the set.

{13, 14, 15}
- 6
- 8
- 3
- 7

10 of 25
Among 170 households surveyed, 43 have a video camera, 44 have a snapshot camera, 48 have binoculars, 7 have a video camera and a snapshot camera, 8 have a snapshot camera and binoculars, and 4 have all three products. What is the probability that a household will have a snapshot camera or binoculars? Express the answer as a fraction.
- 79/170
- 46/85
- 42/85
- 87/170

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How many 3-digit numbers can be formed using the digits 0, 1, 2, 3, 4, 5, 6 if repetition of digits is not allowed?
- 210
- 5
- 6
- 343

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Use a Venn Diagram and the given information to determine the number of elements in the indicated set.

$n(U) = 94$, $n(A) = 41$, $n(B) = 36$, $n(C) = 29$, $n(A \cap B) = 6$, $n(A \cap C) = 3$, $n(B \cap C) = 4$ and $n(A \cap (B \cap C)) = 1$

Find $n(A \cap (B \cup C)')$.

- 1
- 38
- 33
- 5

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Use the multiplication principle to solve the problem.

How many different 5-digit sequences can be formed using the digits 0 , 1 , ...7 if repetition of digits is allowed?
- 16,807

- 120
- 35
- 32,768

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Find the expected value of the random variable in the experiment.

Five rats are inoculated against a disease. The number contracting the disease is noted and the experiment is repeated 20 times. Find the probability distribution and give the expected number of rats contracting the disease.

Number with Disease	Frequency
0	2
1	4
2	7
3	3
4	1
5	3
	Total: 20

- 2.3
- .9
- 2.4
- 1

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Use the given table to find the probability of the indicated event. Round your answer to the nearest thousandth.

College students were given three choices of pizza toppings and asked to choose one favorite. The following table shows the results.

toppings	freshman	sophomore	junior	senior
cheese	10	12	24	21
meat	22	21	12	10
veggie	12	10	22	21

A randomly selected student prefers a meat topping.
- .324
- 0.61
- .330
- .185

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Let U = {q, r, s, t, u, v, w, x, y, z}; A = {q, s, u, w, y}; B = {q, s, y, z}; and C = {v, w, x, y, z}. List the members of the indicated set, using set braces.

$A \cup (B \cap C)$

- {q, r, w, y, z}
- {q, w, y}
- {q, y, z}
- {q, s, u, w, y, z}

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Find the probability of the given event.

A bag contains 5 red marbles, 3 blue marbles, and 1 green marble. A randomly drawn marble is not blue.

- 3/2
- 6
- 1/3
- 2/3

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Find the probability of the given event.

A card drawn from a well-shuffled deck of 52 cards is red.

- 1/26
- 13/52
- 1/2
- 1/52

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The lists below show five agricultural crops in Alabama, Arkansas, and Louisiana.

Alabama	Arkansas	Louisiana
soybeans(s)	soybeans(s)	soybeans(s)
peanuts(p)	rice(r)	sugarcane(n)
corn(c)	cotton(t)	rice(r)
hay(h)	hay(h)	corn(c)
wheat(w)	wheat(w)	cotton(t)

Let U be the smallest possible universal set that includes all of the crops listed; and let A, K, and L be the sets of five crops in Alabama, Arkansas, and Louisiana, respectively. Find the indicated set.

$A' \cap K'$

- {n}
- {c, n, p, r, t}

- ◌ Ø
- ◌ {c, p, r, t}

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Find the odds in favor of the indicated event.

Rolling an odd number with a fair die.
- ◌ 3 to 2
- ◌ 1 to 2
- ◌ 2 to 1
- ◌ 1 to 1

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Suppose P(C) = .048, P(M ∩ C) = .044, and P(M ∪ C) = .524. Find the indicated probability.

P(C')
- ◌ .476
- ◌ 1
- ◌ .956
- ◌ .952

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Five cards are drawn at random from an ordinary deck of 52 cards. In how many ways is it possible to draw two red cards and three black cards?
- ◌ 845,000 ways
- ◌ 422,500 ways
- ◌ 1,690,000 ways
- ◌ 1,267,500 ways

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Awards are to be presented to seven people: Jeff, Karen, Lyle, Maria, Norm, Olivia, and Paul. How many different orders are possible for the awards if the men are to receive their awards first, and then the women?
- ◌ 5040
- ◌ 72
- ◌ 144
- ◌ 2

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Use the union rule to answer the question.

If n(B) = 36, n(A ∩ B) = 7, and n(A ∪ B) = 63; what is n(A)?
- ◌ 36
- ◌ 32
- ◌ 34
- ◌ 27

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For the experiment described, write the indicated event in set notation.

A die is tossed twice with the tosses recorded as an ordered pair. Represent the following event as a subset of the sample space: The second toss shows a two.

- ○ {(1, 2), (3, 2), (5, 2)}
- ○ {(1, 2), (2, 2), (4, 2), (5, 2), (6, 2)}
- ○ {(3, 2)}
- ○ {(1, 2), (2, 2), (3, 2), (4, 2), (5, 2), (6, 2)}

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