

1

2

Gender	Age		Total
	Under 40	40 or older	
Male	12	2	14
Female	8	3	11
Total	20	5	25

The table above shows the distribution of age and gender for 25 people who entered a contest. If the contest winner will be selected at random, what is the probability that the winner will be either a female under age 40 or a male age 40 or older?

A) $\frac{4}{25}$ C) $\frac{11}{25}$
 B) $\frac{10}{25}$ D) $\frac{16}{25}$

2

6

	Type A	Type B	Total
Batch 1	30	15	45
Batch 2	20	40	60
Batch 3	20	25	45
Total	70	80	150

The table shows the batch number and type of item for 150 items. If an item from batch 2 is selected at random, what is the probability that the item is type A?

A) $\frac{20}{40}$ C) $\frac{20}{70}$
 B) $\frac{20}{60}$ D) $\frac{20}{150}$

3

5

The table shows the distribution by breed and sex of dogs that received a vaccine from a veterinarian during the month of July.

Breed	Sex	
	Male	Female
Alaskan malamute	6	2
American foxhound	4	8

If a male dog that received a vaccine during the month of July is selected at random, what is the probability that the dog breed is Alaskan malamute?

A) 0.30
 B) 0.40
 C) 0.60
 D) 0.75

4

7

The table summarizes the number of public schools in two California counties in 2017.

School	County		Total
	Los Angeles	San Diego	
Elementary	1,395	498	1,893
Middle	422	165	587
High	570	191	761
Total	2,387	854	3,241

A public middle school will be selected at random from the two counties. What is the probability, to the nearest hundredth, of selecting a school in San Diego County?

A) 0.05
 B) 0.19
 C) 0.28
 D) 0.69

5

8

A red alder tree will be selected at random from the sample. What is the probability that the selected tree will have a measured diameter that is greater than 30 cm?

A) $\frac{1}{7}$
 B) $\frac{6}{13}$
 C) $\frac{7}{13}$
 D) $\frac{6}{8}$

For a sample of 13 red alder trees, an arborist measured each tree's diameter, in centimeters (cm), at a height of 1.4 meters. The arborist then counted the number of growth rings at this height. Each point in the scatterplot represents the diameter and number of rings for each tree. A line of best fit for these data is also shown.

6

9

Customer Purchases at a Gas Station

	Beverage purchased	Beverage not purchased	Total
Gasoline purchased	60	25	85
Gasoline not purchased	35	15	50
Total	95	40	135

On Tuesday, a local gas station had 135 customers. The table above summarizes whether or not the customers on Tuesday purchased gasoline, a beverage, both, or neither. Based on the data in the table, what is the probability that a gas station customer selected at random on that day did not purchase gasoline?

A) $\frac{15}{50}$
 B) $\frac{15}{40}$
 C) $\frac{35}{50}$
 D) $\frac{50}{135}$

7

9

Number of Registered Voters in the United States in 2012, in Thousands

Region	Age, in years					Total
	18 to 24	25 to 44	45 to 64	65 to 74	75 and older	
Northeast	2,713	8,159	16,986	3,342	2,775	27,975
Midwest	3,553	11,257	13,865	4,221	3,350	36,126
South	5,219	18,072	21,346	7,272	4,969	56,869
West	3,990	10,128	11,598	3,785	2,986	32,187
Total	14,765	47,896	57,795	18,620	14,080	153,157

The table above shows the number of registered voters in 2012, in thousands, in four geographic regions and five age groups. Based on the table, if a registered voter who was 18 to 44 years old in 2012 is chosen at random, which of the following is closest to the probability that the registered voter was from the Midwest region?

A) 0.50 C) 0.40
B) 0.25 D) 0.75

8

13

	Roof type			Total
	Asphalt shingle	Slate	Cedar shake	
Single story	9	4	2	15
Two story	20	10	3	33
Total	29	14	5	48

A) $\frac{4}{48}$
B) $\frac{4}{15}$
C) $\frac{4}{14}$
D) $\frac{14}{48}$

The table above shows the distribution of single-story and two-story houses in a neighborhood classified according to roof type. If one of the houses is selected at random, what is the probability that it will be a single-story house with a slate roof?

9

14

Type of surgeon	Major professional activity		Total
	Teaching	Research	
General	258	156	414
Orthopedic	119	74	193
Total	377	230	607

In a survey, 607 general surgeons and orthopedic surgeons indicated their major professional activity. The results are summarized in the table above. If one of the surgeons is selected at random, which of the following is closest to the probability that the selected surgeon is an orthopedic surgeon whose indicated professional activity is research?

A) 0.122 C) 0.318
B) 0.196 D) 0.379

10

18

	Opinions on the Proposal			Total
	For	Against	Undecided	
County 1	526	980	95	1,601
County 2	667	386	91	1,144
Total	1,193	1,366	186	2,745

A) The probability that the person is undecided, given that the person is from County 1.
B) The probability that the person is undecided, given that the person is from County 2.
C) The probability that the person is from County 1, given that the person is undecided.
D) The probability that the person is from County 2, given that the person is undecided.

The table shows the results of a poll that was used to determine support for a county proposal. The results are categorized by county and opinion. If one person who responded to the poll is selected at random, which of the following statements results in the greatest value?

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18

Survey Results	
Answer	Percent
Never	31.3%
Rarely	24.3%
Often	13.5%
Always	30.9%

A) 0.31
B) 0.38
C) 0.45
D) 0.69

The table above shows the results of a survey in which tablet users were asked how often they would watch video advertisements in order to access streaming content for free. Based on the table, which of the following is closest to the probability that a tablet user answered "Always," given that the tablet user did not answer "Never"?

12

18

	Female	Male	Total
Blue eyes	2	4	6
Brown eyes	8	6	14
Green eyes	1	5	6
Total	11	15	26

Sierra recorded the gender and eye color of all the students in her biology class. The results are shown in the table above. If a male student is selected at random from Sierra's biology class, what is the probability that he will have brown eyes?

A) $\frac{2}{3}$ B) $\frac{2}{5}$ C) $\frac{3}{7}$ D) $\frac{3}{13}$

13

19

Age group (in years)	Agree	Disagree	Total
18-29	113	109	222
30-44	126	136	262
45-64	145	201	346
65 and up	68	102	170
Total	452	548	1000

A) 0.37
B) 0.45
C) 0.49
D) 0.55

The table shows the results of a poll of 1,000 people. Respondents were asked to agree or disagree with the statement "I rely too much on my phone." If a respondent who was selected at random disagrees with the statement, which of the following is closest to the probability that the respondent selected is at least 45 years old?

14

21

Dreams Recalled during One Week

	None	1 to 4	5 or more	Total
Group X	15	28	57	100
Group Y	21	11	68	100
Total	36	39	125	200

The data in the table above were produced by a sleep researcher studying the number of dreams people recall when asked to record their dreams for one week. Group X consisted of 100 people who observed early bedtimes, and Group Y consisted of 100 people who observed later bedtimes. If a person is chosen at random from those who recalled at least 1 dream, what is the probability that the person belonged to Group Y?

A) $\frac{68}{100}$ C) $\frac{79}{164}$
B) $\frac{79}{100}$ D) $\frac{164}{200}$

15

24

Change in Value of 50 Stocks

	Increased in July	Decreased in July	Total
Increased in August	21	9	30
Decreased in August	4	16	20
Total	25	25	50

The two-way table categorizes the change in value in July and August for 50 stocks. If one of the stocks that increased in value in August is chosen at random, what is the probability that the stock also increased in value in July?

A) 0.42 C) 0.70
B) 0.60 D) 0.84

16

25

	Triangle	Rectangle
Blue	7	8
Red	5	6

The table shows the distribution of objects in a collection by shape and color. If a triangle is selected at random, what is the probability that the selected triangle is red?

A) $\frac{5}{26}$ C) $\frac{5}{11}$
B) $\frac{5}{12}$ D) $\frac{5}{7}$

17

Number of Contestants by Score and Day

	5 out of 5	4 out of 5	3 out of 5	2 out of 5	1 out of 5	0 out of 5	Total
Day 1	2	3	4	6	2	3	20
Day 2	2	3	5	5	4	1	20
Day 3	3	3	4	5	3	2	20
Total	7	9	13	16	9	6	60

The same 20 contestants, on each of 3 days, answered 5 questions in order to win a prize. Each contestant received 1 point for each correct answer. The number of contestants receiving a given score on each day is shown in the table above.

38. No contestant received the same score on two different days. If a contestant is selected at random, what is the probability that the selected contestant received a score of 5 on Day 2 or Day 3, given that the contestant received a score of 5 on one of the three days?

- 1 B 9 A
2 B 10 C
3 C 11 C
4 C 12 B
5 C 13 D
6 D 14 C
7 B 15 C
8 A 16 B
17 5/7 = .714