

# Level E - Form 1 - Applied Mathematics: Statistics and Probability

## Sample Question

Kelly rolls a six-sided die labeled 1 through 6.  
What is the probability that she will roll a 5?

- A  $\frac{1}{5}$
- B  $\frac{1}{2}$
- C  $\frac{1}{6}$
- D  $\frac{5}{6}$

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Emma is thirsty. The shelf below shows the drinks that she has available. Study the picture below. Then do Numbers 1 through 4.



- Emma can choose any drink on the shelf. What is the probability that she will choose a root beer?
  - $\frac{1}{8}$
  - $\frac{1}{7}$
  - 1
  - 0
- If Emma selects one drink without looking, which of these statements would be true?
  - It is impossible that she will select an iced tea.
  - It is certain that she will select a lemonade.
  - It is certain that she will select an iced tea.
  - It is possible that she will select an iced tea.
- Which statement best describes Emma's chances if she picks one drink without looking?
  - Emma is more likely to pick an iced tea than a lemonade.
  - Emma is more likely to pick a lemonade than an iced tea.
  - Emma is equally likely to pick an iced tea or a lemonade.
  - Emma's chances of picking an iced tea are impossible.
- Which change would make the chances of choosing either drink equally likely?
  - Removing one of each drink.
  - Removing one lemonade.
  - Adding two iced teas.
  - Adding two of each drink.

**There is only one seat left for a play-off game. Three men, Matt, Steve, and Doug, and one woman, Sharon, want to go. Each writes his or her name on a separate slip of paper and puts it in a bag. Matt picks one slip of paper without looking. Use this information to do Numbers 5 through 6.**

5. Which of the following statements is true?

- A It is more likely that a man will be chosen.
- B It is equally likely that a man or woman will be chosen.
- C It is more likely that Matt will be chosen.
- D It is certain that a woman will not be chosen.

6. What is the probability that a woman gets chosen?

- F  $\frac{1}{3}$
- G  $\frac{1}{4}$
- H  $\frac{3}{4}$
- J  $\frac{4}{1}$

7. A die with sides numbered one to six is rolled. What is the probability of rolling a 4?

- A  $\frac{2}{3}$
- B  $\frac{1}{4}$
- C  $\frac{6}{1}$
- D  $\frac{1}{6}$

8. A die with sides numbered one to six is rolled. What is the probability of rolling an even number?

- F  $\frac{1}{3}$
- G  $\frac{1}{6}$
- H  $\frac{2}{1}$
- J  $\frac{1}{2}$

9. A die with sides numbered one to six is rolled. What is the probability of rolling a number less than three?

- A  $\frac{1}{2}$
- B  $\frac{1}{3}$
- C  $\frac{1}{6}$
- D  $\frac{3}{1}$

10. Lucinda bought 7 blocks, each with a different letter of her name on it. The blocks were put into a bag. To show a friend what she bought, she grabs one block from the bag without looking. What is the probability that Lucinda picks the letter L?

F  $\frac{7}{1}$

G  $\frac{6}{7}$

H  $\frac{1}{6}$

J  $\frac{1}{7}$

The table shows Neil's business activities for Friday and the estimated time for each. Study the table. Then do Numbers 11 through 12.

Activity	Minutes
Read e-mail	30
Staff meeting	90
Conference call	45
Lunch	30
Planning	30
Computer training	90
Interview	45

11. What is the range of the lengths of time?
- A 15 minutes
  - B 90 minutes
  - C 60 minutes
  - D 30 minutes
12. What is the mode of the lengths of time?
- F 30 minutes
  - G 45 minutes
  - H 60 minutes
  - J 90 minutes

The table shows the number of laps Hamid swam last week. Study the table. Then do Numbers 13 through 14.

Number of Laps

Day	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.
Laps	30	25	40	30	20	35

13. What is the median number of laps Hamid swam last week?
  - A 30 laps
  - B 35 laps
  - C 20 laps
  - D 40 laps
  
14. What is the average number of laps Hamid swam last week?
  - F 30 laps
  - G 40 laps
  - H 30.6 laps
  - J 28.3 laps

The table shows the number of service calls made by each plumber on the staff of Grandview Plumbing. Study the table. Then do Numbers 15 through 17.

Service Calls by Grandview Plumbing

	M	T	W	Th	F
Fran	6	8	8	9	9
Rodrigo	8	9	8	7	7
Dwayne	0	8	8	6	10
Le Var	9	8	8	7	6

15. What is the range of all calls in the table?
  - A 0
  - B 4
  - C 10
  - D 16
  
16. What is the average of the number of Fran's calls?
  - F 8
  - G 9
  - H 8.5
  - J 7.6
  
17. What is the mode of all calls in the table?
  - A 10
  - B 0
  - C 8
  - D 7

The sign shows prices for new DVDs. Study the sign. Then do Numbers 18 through 19.

Prices for new DVDs

\$17.44	\$14.99	\$21.00	\$16.50	\$15.99
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18. What is the median price of the new DVDs?

F \$21.00

G \$14.99

H \$6.01

J \$16.50

19. What is the range in new DVD prices?

A \$1.45

B \$6.01

C \$7.99

D \$7.01

20. Mai has four children. Their ages are 3, 3, 9, and 13. What is the average age of Mai's children?

F 7

G 3

H 6

J 10