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7.SP.C.6 Solve Experimental Probability Problems

7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

1. You toss a coin 30 times and get 12 heads. The experimental probability of getting heads is

   [A] $\frac{3}{5}$. [B] $\frac{2}{5}$. [C] $\frac{1}{2}$. [D] $\frac{2}{3}$.

2. A number cube is rolled 330 times and the results recorded as follows: There were 55 ones, 60 twos, 49 threes, 58 fours, 57 fives, and 51 sixes. What is the experimental probability of rolling a number greater than four?

   [A] 0.43 [B] 0.33 [C] 0.67 [D] 0.57

3. A number cube is rolled 450 times and the results recorded as follows: There were 75 ones, 80 twos, 69 threes, 78 fours, 77 fives, and 71 sixes. What is the experimental probability of rolling a two or a three?

   [A] 0.33 [B] 0.57 [C] 0.43 [D] 0.67

4. A number cube is rolled 390 times. The number three comes up 63 times.
   a) What is the theoretical probability of rolling a three?
   b) What is the experimental probability of rolling a three?

5. A quality control inspector rejected 253 can openers from a batch of 19,354. What is the experimental probability that a can opener will pass inspection? Round your answer to the nearest hundredth.

6. After the introduction of a new juice, a taste test is conducted to see how it is being received. Of those who participated, 40 said they preferred the new juice, 92 preferred the old juice, and 68 could not tell any difference. What is the probability that a person in this survey preferred the new juice?

   [A] $\frac{1}{5}$ [B] $\frac{1}{4}$ [C] $\frac{10}{33}$ [D] $\frac{10}{23}$

7. This table shows the time it takes students in Homeroom 203 to get to school each morning:

Time	Number of Students
Less than 10 min	3
10 – 19 min	5
20 – 29 min	10
30 – 39 min	7
40 – 49 min	2
50 min or more	3

   Find the experimental probability of a student in this homeroom taking a certain number of minutes to get to school. Make a probability distribution for this data.

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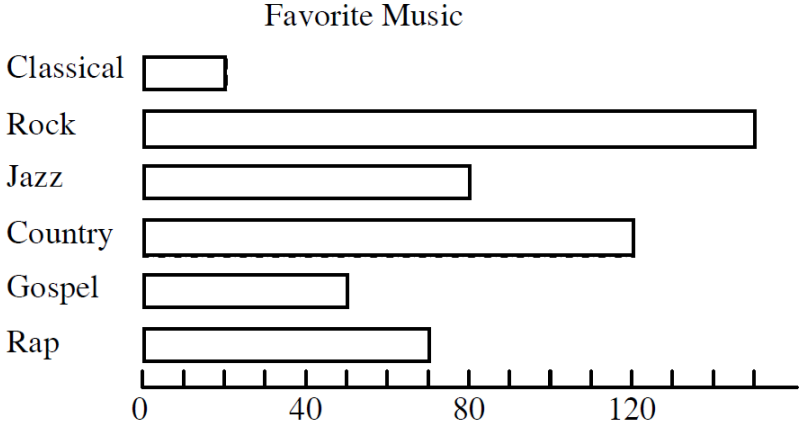
8. This graph shows the results of a survey conducted at a local shopping mall about favorite music.



If a survey respondent was selected at random to win a CD, what is the probability that gospel music was the winner's favorite?

9.

	# Heads	# Tails	# Tosses	P(Heads)
A	1	1	2	50%
B	3	2	5	60%
C	6	4	10	60%
D	24	26	50	48%

Use the table above. For 50 tosses, what was the experimental probability of heads?

10.

	# Heads	# Tails	# Tosses	P(Heads)
A	1	1	2	50%
B	3	2	5	60%
C	6	4	10	60%
D	24	26	50	48%

Use the table above. For five tosses, what was the experimental probability of tails?

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Answer Key

7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

[1] B

[2] B

[3] A

[4] a. $\frac{1}{6}$ b. $\frac{21}{130}$

[5] 0.99

[6] A

Check students' graphs.