**College Prep Math** **Name: _____**

**Unit 7 Review: Probability & Statistics**

1. **You randomly draw a marble out of a bag containing 8 green marbles, 4 blue marbles, 12 yellow marbles, and 10 red marbles. Find the probability of drawing a marble that is not yellow.**

| Write the probability as a: | | |
|---|---|---|
| | = | = |
| _____ | _____ | _____ |
| fraction | decimal | percent |

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2. **You roll a six-sided die 30 times. A 5 is rolled 8 times.**

   a) **What is the <u>theoretical</u> probability of rolling a 5?**

| Write the probability as a: | | |
|---|---|---|
| | = | = |
| _____ | _____ | _____ |
| fraction | decimal | percent |

   b) **What is the <u>experimental</u> probability of rolling a 5?**

| Write the probability as a: | | |
|---|---|---|
| | = | = |
| _____ | _____ | _____ |
| fraction | decimal | percent |

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3. **36% of teachers at LTHS are male. 8% of teachers at LTHS are math teachers. If you randomly select a teacher at LTHS, what is the probability that the teacher will be a male math teacher? Write the probability as a percent.**

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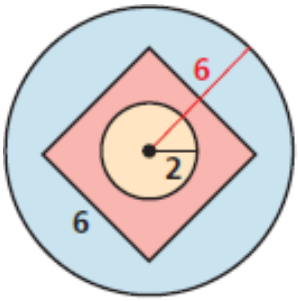
4. **The probability of event A happening is 25%. If the probability of event A AND event B happening is 5%, what is the probability of event B happening? Write the probability as a percent.**

**5. A dart is thrown at a circular target modeled by the diagram (the target is the larger circle). Assume that the dart does not land outside the target and is equally likely to hit any point inside the target.**




a) Find the area of the larger circle. Round to 2 decimal places.

b) Find the area of the square.

c) Find the area of the smaller circle. Round to 2 decimal places.

d) What is the probability that the dart lands inside the smaller circle? Write your answer as a percent.

e) What is the probability that the dart lands outside the square? Write your answer as a percent.

f) What is the probability that the dart lands inside the square but outside the center circle? Write your answer as a percent.

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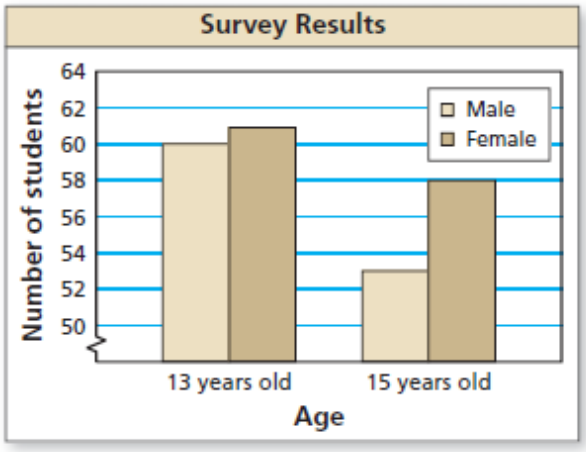
**6. A survey asks 13-year-old and 15-year-old students about their eating habits. Four hundred students are surveyed, 100 male students and 100 female students from each age group. The bar graph shows the number of students who said they eat fruit every day.**




a) Find the probability that a female student, chosen at random from the students surveyed, eats fruit every day. Write your answer as a percent.

b) Find the probability that a 15-year-old student, chosen at random from the students surveyed, eats fruit every day. Write your answer as a percent.

**7. There are 14 boys and 18 girls in a class. The teacher allows the students to vote whether they want to take a test of Friday or on Monday. A total of 6 boys and 10 girls vote to take the test on Friday.**

a) Organize the information in a two-way table.

| | | Day | | |
|---|---|---|---|---|
| | | FRIDAY | MONDAY | TOTAL |
| Students | BOYS | | | |
| | GIRLS | | | |
| | TOTAL | | | |

b) How many total students are in the class?

c) What percent of the class is a boy that votes to take the test Friday?

d) What percent of the class is a girl that votes to take the test Monday?

e) A student is chosen at random from the class. What is the probability that the student is a girl?

f) A student is chosen at random from the class. What is the probability that the student votes to take the test Friday?

g) A student is chosen at random from the class. What is the probability that the student is a boy that votes to take the test Monday?

h) What percent of students voted for Friday?

**8. A bag contains 9 tiles, one for each letter in the word HAPPINESS. You choose a tile at random.**

a) What is the probability that you choose a tile with the letter S?

Write the probability as a:

_____ = _____ = _____

fraction decimal percent

b) What is the probability that you choose a tile with a letter that <u>is not</u> P?

Write the probability as a:

_____ = _____ = _____

fraction decimal percent

c) What is the probability that you choose an H, put the H back, and then choose an N?

Write the probability as a:

_____ = _____ = _____

fraction decimal percent

d) What is the probability that you choose a P, and without putting it back, choose another P?

Write the probability as a:

_____ = _____ = _____

fraction decimal percent

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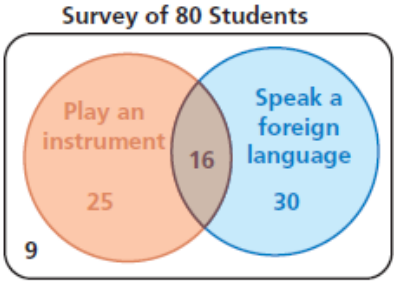
**9. The Venn diagram shows the results of a survey in which 80 students were asked whether they play a musical instrument and whether they speak a foreign language. Use the Venn diagram to complete the two-way table.**




| | Play an Instrument | Do Not Play an Instrument | Total |
|---|---|---|---|
| Speak a Foreign Language | | | |
| Do Not Speak a Foreign Language | | | |
| Total | | | |

**10. What is the median of 10, 10, 12, 4, 19, and 17?**

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**11. The average of 4 numbers is 29. If 11, 19 and 40 are three of the numbers, what is the fourth number?**

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**12. The mean of 5, 9, and $x$ is 8. What is the value of $x$?**

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**13. On her first three tests, Daniella scored an 86, 89, and 91. What score must she get to have an average of exactly 90 across all four tests?**

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**_____ 14. Students in Ms. Rome's science class used scales to measure the mass of different marbles in grams. The masses were 5.7g, 5.8g, 6.2g, 5.9g, and 6.0g. What measure would be best to estimate the mass of a random marble?**

A. Minimum
B. Maximum
C. Mode
D. Mean

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**15. The distance that Lily bikes each day is shown in the table below. What was her average daily biking distance?**

| | |
|---|---|
| Day 1 | 6 miles |
| Day 2 | 5 miles |
| Day 3 | 3 miles |
| Day 4 | 6 miles |
| Day 5 | 4 miles |

**16. The table shows the cost per scoop of ice cream at an ice cream parlor. If the mean cost of a scoop of ice cream is $0.73, what is the cost of a scoop of Vanilla ice cream?**

| Flavor of Ice Cream | Cost Per Scoop |
|---|---|
| Cookie Dough | $0.73 |
| Double Chocolate | $0.82 |
| Mint Chip | $0.70 |
| Vanilla | ? |
| Neapolitan | $0.86 |

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**17. Eli got the following high scores in his favorite video game:**

390 420 510 440 490

**What is the range of his scores?**

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**_____ 18. The table below shows the number of shots made by players on a basketball team in a week. If the median number of shots made was 31, what could have been the number of shots that Stephon made?**

**A.** 30

**B.** 36

**C.** 42

**D.** 48

| Player | Shots Made |
|---|---|
| Victor | 31 |
| De'Aaron | 15 |
| Stephon | ? |
| Devin | 47 |
| Dylan | 53 |