GRADE 7 · UNIT 2 · REVIEW

Probability — Unit Review

Lessons 1–9

Name_____

Date_____

Period_____

Show your work. Circle your final answer.

1. A bag holds one red marble, one blue marble, one green marble, and one yellow marble. One marble is drawn without looking. Write the sample space for this experiment.

2. Select ALL the values that could be the probability of an event.

- ☐ **A.** 0
- ☐ **B.** 1.4
- ☐ **C.** $\frac{3}{8}$
- ☐ **D.** −0.2
- ☐ **E.** 87%
- ☐ **F.** $\frac{5}{4}$

3. Complete the table. Write each value in all three forms. Write every fraction in lowest terms, and use a bar over any digits that repeat.

	Fraction	Decimal	Percent
a.	$\frac{7}{11}$		
b.		0.45	
c.			64%

4. Write each repeating decimal as a fraction in lowest terms.

a. $0.\overline{4}$

b. $0.\overline{27}$

5. A survey found that $11.\overline{1}\%$ of students walk to school. Write that percent as a fraction in lowest terms.

6. A spinner has 8 equal sections numbered 1 through 8. Find each theoretical probability as a fraction, a decimal, and a percent.

a. P(a factor of 8)

b. P(a number greater than 5)

7. The probabilities of four events are shown. List them in order from least to greatest.

$\frac{5}{8}$	70%	0.66	3 out of 5

Least to greatest: _____ , _____ , _____ , _____

8. A bag holds 24 letter tiles: 10 A, 6 B, 5 C, and 3 D. One tile is drawn at random. Write each probability as a fraction.

a. P(A or C)

b. P(not B)

c. P(D)

9. Place an X in every box where the simulation could fairly represent the context. Some contexts have more than one correct simulation.

Context	A coin.	A standard number cube numbered 1 through 6.	A deck of 20 cards, each with a different number.
A player who makes 3 out of every 4 free throws.			
A team that wins 1 out of every 5 games.			
A 50% chance of rain today.			
A 1 in 3 chance of winning a prize.			

10. A player makes 3 out of every 4 free throws. You want to run a simulation of the player's next free throw.

a. Which tool could fairly simulate it? Fill in one bubble.

- ○ A coin.
- ○ A standard number cube numbered 1 through 6.
- ○ A deck of 20 cards, each with a different number.

b. Using that tool, how many outcomes should count as a made free throw? _____

c. Explain why a coin does not work.

11. Three simulations of the same event gave 12%, 38%, and 55%. The theoretical probability is 40%. Which simulation most likely used the most trials? Explain how you know.

12. There are three doors. One of them has a prize behind it. Dana says the probability of picking the prize is 1/3. Jae says there are only two outcomes — you win or you lose — so the probability is 1/2. Who is correct, and what mistake did the other student make?

13. A spinner has 8 equal sections numbered 1 through 8. Sections 1, 2, 3 and 4 are red, sections 5, 6 and 7 are blue, and section 8 is yellow. Jamal spun it 40 times and landed on red 16 of those times. Every part below is about this same spinner — read what each one is actually asking for.

a. Write the sample space for one spin.

b. Find P(red) from the spinner itself. Write it as a percent, and say whether it is an experimental or a theoretical probability.

c. Find P(red) from Jamal's 40 spins. Write it as a percent, say which kind it is, and say which of your two answers would move if he spun 400 more times.

d. Jamal says the three colors are equally likely, because the eight sections are. Is he right? Explain.