

## Module Quiz: B

1. Which of the following is the solution to the equation below?

$$x - 1.4 = 0.6$$

- A 0.8  
B 1.0  
C 1.2  
D 2.0
2. Lani opened a savings account with \$450. She saves \$225 per month. Which equation shows how much money Lani has in her account after  $m$  months?

A  $y = -\frac{450}{225}m$

B  $y = 450m + 225m$

C  $y = 450 + 225m$

D  $y = 225 + 450m$

3. What is the value of  $y$  that satisfies the equation below?

$$\frac{y}{3} = 12$$

- A 3  
B 4  
C 36  
D 63
4. Kimmy earns a \$200 commission on all sales plus a base salary of \$30,000. Her total income last year was \$80,000. Which equation can be used to calculate the number of Kimmy's sales?

A  $30,000 + 200x = 80,000$

B  $30,000 - 200x = 80,000$

C  $200 + 30,000x = 80,000$

D  $80,000 + 200x = 30,000$

5. Rashida owns a bike rental company. She charges an initial fee of \$10 for each rental and an hourly rate of \$4. Which of the equations below shows the amount  $y$  that Rashida charges for a bike rental that lasts  $x$  hours?

A  $y = 10 + 4x$

C  $y = 4 + 10x$

B  $y = 10 - 4x$

D  $y = 4 - 10x$

6. Which of the following uses the Distributive Property?

A  $0.4 \times (2a - 0.3b) = 0.4 + (2a - 0.3b)$

B  $0.4 \times (2a - 0.3b) = \frac{(2a - 0.3b)}{0.4}$

C  $0.4 \times (2a - 0.3b) = 0.8a - 0.12b$

D  $0.4 \times (2a - 0.3b) = 0.8a \times 0.12b$

7. The chess club has 50 members. They want to raise \$680 for a trip to a competition. The school will give \$130. How much must each member pay?

A \$5

C \$11

B \$10

D \$550

8. Which of the following ratios is **not** equivalent to 1:4?

A  $\frac{1}{2}$

C  $\frac{3}{12}$

B  $\frac{2}{8}$

D  $\frac{4}{16}$

9. Which of the following values does **not** satisfy the inequality  $-2x - 6 \leq 1$ ?

A -4

C -2

B -3

D -1

10. Alexa started a race with a 50-meter head start. She ran at a rate of 6.25 meters per second. After how many seconds was Alexa 200 meters past the starting line?

A 20

C 32

B 24

D 40

11. Jamie has 6 quarters and some dimes in his pocket. The total value of the coins is \$4.50. How many dimes does he have in his pocket?

A 10

C 30

B 20

D 40

**MODULE**  
**6**

**Expressions and Equations**

12. Massimo has \$90 in the bank. Every time he rides the bus he spends \$2.50. Write and solve an equation that Massimo can use to see how many times he can ride the bus.

$2.50x = 90 ; 36 \text{ times}$

13. Timani bought a video game console and some games for \$350. The video game console cost \$200. Each game cost \$25. How many games did Timani purchase?

6 games

14. Allison bought some shirts for her clothing store for \$15 each. She received \$50 off her entire purchase and spent a total of \$400. How many shirts did Allison purchase for her store?

30 shirts

15. Jane has 6 more than half the number of pairs of shoes that Mercedes has. Write an expression for this.

Sample:  $\frac{m}{2} + 6$

16. Write a word phrase for  $0.3x + 5$ .

Three tenths of a number plus 5.

17. Kelly has 4 dimes and some nickels. The total value of her coins is \$2.25. Write an equation for this.

$4 \text{ dimes} = \$0.40$   
Some Nickels =  $0.05x$   
 $0.4 + 0.05x = 2.25$

18. Solve for  $x$ .

$0.25x = 10$   
 $x = 40$

19. Paco solved the equation  $-3x - 5 = 1$ . His work is shown below.

Step 1:  $-3x - 5 = 1$

Step 2:  $-3x = 6$

Step 3:  $x = 2$

Where did Paco make an error in his calculation? Explain.

He  $\div 6$  by 3 instead of  $-3$  in step 3

20. Oswaldo earns a salary of \$2,500 per month plus an 8% commission on all of his sales. He wants to earn \$5,400 next month. Write an equation that shows what his total sales  $s$  must be in order for Oswaldo to reach his goal.

$2,500 + 0.08s = 5,400$

21. Wallace has a \$50 bill. Pizza pies cost \$12.25 each. If  $p$  represents the number of pizzas he buys, write an expression for the change he receives.

$50 - 12.25p$

22. Juma earns \$12.50 for each newspaper subscription he sells. He also earns a \$50 base salary each week. If he wants to earn \$400 next week, how many newspaper subscriptions does he need to sell? Write an equation and solve.

$50 + 12.50x = 400$   
 $x = 28$



**MODULE**  
**7**

**Inequalities**

12. Solve the inequality. Show your work.

$$\frac{x}{6} \leq 1$$

$$x \leq 6$$

Use the inequality for 13 and 14.

$$x + 8 \geq 5$$

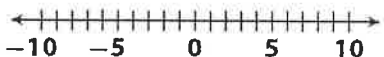
13. Solve the inequality. Show your work.

$$x + 8 \geq 5$$

$$\underline{-8 \quad -8}$$

$$x \geq -3$$

14. Graph the solution on the number line.



Use the inequalities for 15–17.

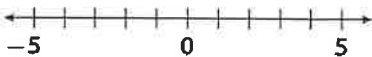
①  $-3x > 9$

②  $3x > -9$

15. Explain the difference between the two inequalities. How does this affect your method of solution?

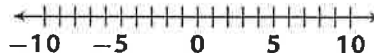
To solve #1 you need to divide by a negative so you have to flip the symbol. The 2nd one you divide by a positive and don't flip.

16. Solve the first inequality and graph its solution on the number line.



$$x < -3$$

17. Solve the second inequality and graph its solution on the number line.



$$x > -3$$

18. Raja solved the inequality  $-3x - 5 \leq 1$ . His work is shown below.

Step 1:  $-3x - 5 \leq 1$

Step 2:  $-3x \leq 6$

Step 3:  $x \leq -2$

Where did Raja make an error in his calculation? Explain.

He forgot to flip the inequality symbol in step 3.

19. Joaquim earns a salary of \$4,000 per month plus a 6% commission on all of his sales. He wants to earn at least \$7,000 next month. Write an inequality that shows what his total sales  $s$  must be in order for Joaquim to reach his goal.

$$4,000 + 0.06s \geq 7,000$$

20. Every month, the bank withdraws \$15 from Betsy's checking account as a service fee. Betsy has budgeted \$75 for the next few service fees. For how many months will the service fee be covered? Write and solve an inequality to find the solution. Show your work.

$$15x \leq 75$$

$$\underline{15 \quad 15}$$

$x \leq 5$ ; Betsy can pay for more than 5 months of the service fee.



**MODULE**  
**12**

**Experimental Probability**

11. A number cube has sides labeled 1 to 6. Connie rolls the number cube 12 times. She rolls a 5 three times. What is the experimental probability that her next roll will **not** be a 5?

$\frac{3}{4}$

12. Suki has 54 rock songs, 92 dance songs and 12 classical songs on her playlist. If Suki's music player randomly selects a song from the playlist, what is the probability that the song will **not** be a classical song?

$\frac{73}{79}$  or 0.92

13. **Dominick's Survey Results**

Food	Number of Students
Pizza	8
Hamburger	12
Pasta	14
Steak	6

Dominick recorded the favorite food of students in his class. Based on the results of his survey, what is the experimental probability the next student he surveys will respond "Pizza" or "Steak"?

$\frac{14}{40} = \frac{7}{20}$  or 0.35

14. The experimental probability of rain in a certain town is 20 percent. In the next 45 days, how many days can one expect it to rain?

9 days

15. Alessandro painted  $\frac{1}{3}$  of a wall in 45 minutes. If he keeps painting at the same rate, how much longer will it take him to finish painting the wall?

1 hr 30 min

16. **Cathy's Color Picks**

Color	Frequency
Red	10
Yellow	5
Blue	12
Orange	28

Cathy conducted an experiment in which she placed red, yellow, blue, and orange pieces of paper in a hat and drew them out without looking. The number of times Cathy drew each color is shown in the table above. What is the experimental probability that the next slip of paper Cathy draws will be orange?

$\frac{28}{55}$  or 0.51

17. The experimental probability that Amir will make a basket is 0.4. The experimental probability that Juju will make a basket is 0.6. If Amir and Juju each shoot 150 baskets, about how many more baskets will Juju be expected to make?

30 more

18. Daria selected a number from the positive integers less than 10. What is the probability that she selected a prime number?

$\frac{4}{9}$

**MODULE**  
**13****Theoretical Probability and Simulations****Module Quiz: B**

- What is the probability of flipping a coin 3 times and getting 3 heads?  
A  $\frac{1}{8}$                       C  $\frac{1}{2}$   
B  $\frac{1}{4}$                         D  $\frac{3}{4}$
- Two number cubes each have sides that are labeled 1 to 6. Isis rolls the 2 number cubes. What is the probability that the sum of the numbers rolled will equal 4?  
A  $\frac{1}{36}$                       C  $\frac{1}{12}$   
B  $\frac{1}{18}$                         D  $\frac{1}{6}$
- Dustin has a spinner that is divided into 5 equal-size sections colored red, blue, orange, white, and green. What is the probability that Dustin spins pink on the next spin?  
A 0                            C 0.5  
B 0.25                        D 0.75
- Isidro flips a fair coin 40 times. How many times can he expect heads to appear?  
A 4                            C 15  
B 10                          D 20
- A number cube has sides labeled 1 to 6. Hannah rolls the number cube 18 times. How many times can she expect to roll a number less than 3?  
A 2                            C 6  
B 3                            D 8
- Flavia has a bag with 8 white balls, 9 red balls, 14 green balls, and 10 orange balls. If she chooses a ball from the bag without looking, which color ball will Flavia be **least** likely to choose?  
A white                      C green  
B red                         D orange
- Without looking, Tammy takes a marble out of a bag that contains 10 red marbles, 15 green marbles, and 25 blue marbles. She records its color and returns the marble to the bag. If Tammy repeats this process 90 times, how many times can she expect to pull out a red marble?  
A 5                            C 15  
B 10                          D 18
- Caelin drives at 30 miles per hour. How many hours will it take him to drive 210 miles?  
A 5 h                         C 7 h  
B 6 h                         D 8 h
- Alexander spins a spinner with four equally-sized regions and flips a coin. How many outcomes are possible?  
A 2                            C 8  
B 6                            D 36
- Scarlett selects a card at random from a deck that contains 18 red, 12 yellow, and 20 blue cards. What is the probability that she does **not** select a red card?  
A  $\frac{13}{25}$                         C  $\frac{18}{25}$   
B  $\frac{16}{25}$                         D  $\frac{24}{25}$
- Bella rolls 2 number cubes 60 times. How many times can she expect the sum of the numbers to be greater than 10?  
A 3                            C 10  
B 5                            D 12
- Glen has 3 pairs of shoes, 5 shirts, and 4 pairs of pants. How many outfits consisting of 1 pair of shoes, 1 shirt, and 1 pair of pants can he make?  
A 12                          C 30  
B 20                          D 60

**MODULE**  
**13**

**Theoretical Probability and Simulations**

13. Two number cubes each have sides labeled 1 to 6. Ann rolls both number cubes. On the first roll, the sum of the numbers was equal to 10. On the second roll, the sum of the numbers was equal to 7. Which sum was more likely to occur? Explain.

Sum of 7; there are more ways to get a sum of 7 than 10

14. **Simran's Simulation Results**

Trial	Numbers Generated	Trial	Numbers Generated
1	1, 1, 3, 3	6	4, 5, 5, 5
2	3, 4, 5, 5	7	3, 4, 4, 5
3	2, 3, 4, 4	8	2, 2, 2, 1
4	1, 3, 4, 4	9	4, 5, 5, 3
5	3, 4, 4, 5	10	3, 3, 3, 3

7/10

Simran used a simulation to predict the number of defective parts that are produced in a factory. Random numbers are generated. A number 1 indicates that the part is defective. Numbers 2, 3, 4, or 5 indicate that the part is not defective. Of the next four parts produced, what is the experimental probability that none of the parts are defective?

0.7; 7/10; 70%

15. Fatima bought a video game that has a regular price of \$45. The game was on sale for 15 percent off, and she paid sales tax of 7 percent. What was the price Fatima paid for the video game?

\$40.93

16. Constantine walked 4 miles in 50 minutes. If he continues walking at this pace, how many minutes will it take him to walk 6 miles?

75 min

17. **Simran's Simulation Results**

Trial	Numbers Generated	Trial	Numbers Generated
1	1, 1, 3, 3	6	4, 5, 5, 5
2	3, 4, 5, 5	7	3, 4, 4, 5
3	2, 3, 4, 4	8	2, 2, 2, 1
4	1, 3, 4, 4	9	4, 5, 5, 3
5	3, 4, 4, 5	10	3, 3, 3, 3

4/10

Simran used a simulation to predict the number of days of rain in his town. A number 1 or 2 indicates a week in which it rained. Numbers 3, 4, or 5 indicate a week in which it did not rain. The results of the simulation are shown above. What is the experimental probability that it will rain in Simran's town in at least 1 of the next 4 weeks?

0.4; 4/10; 40%

18. Each student in a class of 25 students wrote down a random digit. What is the predicted number of students who wrote a digit that is greater than 7?

5

19. A special deck of cards consists of 5 red cards, 20 blue cards, and 25 green cards. Svetlana selects 1 card from the special deck 500 times. How many times can she expect to draw a red card?

50