

Directions: Answer the following question(s).

1

Web Only Interaction

Web Only Interaction

2

Jacob earns \$15 per hour. He has saved \$200 and is planning to buy a dresser that costs \$500. Which of these represent the number of hours' pay,  $x$ , that Jacob must save to be able to purchase the dresser?

Choose ALL that are correct.

- A.  $x \geq 20$
- B.  $15x \geq 300$
- C.  $15x + 200 \leq 500$
- D.  $x \leq 20$
- E.  $15x + 200 \geq 500$

3

The chess club has \$249 in its general fund and wants to raise additional funds to send its members out of town for an upcoming tournament. The club decides to sell chess piece key chains as a fund-raiser. A quantity of 192 key chains are purchased for \$0.42 each, and all of them are sold for \$2.50 each.

Which of the equations below model this situation and can be solved to find  $x$ , the new balance in the club's general fund, after the fund-raiser? Select all that apply.

- A.  $\$249 - 192(\$0.42) + 192(\$2.50) = x$
- B.  $\$249 + 192(\$2.08) = x$
- C.  $192(\$249 - \$0.42 + \$2.50) = x$
- D.  $\$249 + 192(\$0.42) + 192(\$2.50) = x$
- E.  $\$249 + 192(\$0.42 - \$2.50) = x$
- F.  $\$249 + 192(\$2.50 - \$0.42) = x$

4

Which of these are true statements?

- A.  $-2\left(1 + \frac{1}{2}\right) = -3$
- B.  $-\frac{2}{3} \div \frac{1}{2} = -\frac{4}{3}$
- C.  $\frac{1}{4}(2 - 6) = -5\frac{1}{2}$
- D.  $-\frac{1}{2}\left(\frac{4}{5} \times \left(-\frac{1}{2}\right)\right) = \frac{1}{5}$
- E.  $-3\left(\frac{2}{5} \div \frac{1}{5}\right) = 2$
- F.  $3\left(-\frac{1}{5} - \frac{2}{3}\right) = -2\frac{3}{5}$

5

Which of the following questions can be answered by  $\frac{x}{4}$ ? Choose ALL that are correct.

- A. Damian makes  $x$  chocolates and divides them into 4 boxes. How many candies are in each box?
- B. Xiomara's photo album contains  $x$  pictures, with 4 pictures on each page. How many pages are in the album?
- C. A florist places 4 tulips in each of  $x$  bouquets. How many tulips does she use in all?
- D. Francine has  $x$  books and buys 4 more at the book fair. How many books does she have in all?
- E. Michael has 4 pizzas to share among  $x$  friends. What fraction of a pizza will each friend receive?

Directions: Answer the following question(s).

- 6 Over a period of three weeks, Charles has saved \$196. The first week he saved \$42. For the next two weeks, the amount of money he saved each week was the same. Which equations correctly represent  $w$ , the amount Charles saved during each of the latter two weeks?

Choose ALL that are correct.

- A.  $w + w = 154$
- B.  $w + 42 = 196$
- C.  $w = 77$
- D.  $2w + 42 = 196$
- E.  $w = 119$
- F.  $3w + 42 = 196$

- 7 Karl takes a ride in a taxi and is charged \$2.75 for the first  $\frac{3}{4}$  of a mile. He is charged \$0.25 for each additional  $\frac{1}{10}$  of a mile traveled and gives the driver a \$3.50 tip. Explain how to determine the number of miles that Karl can ride in the taxicab for a total of \$28.50 including the tip. Show your work.

- 8 Rollers Bowling charges families a group rate of \$12.50 for shoes plus an additional \$4.75 for each game a family member plays. The Jones family's total bill was \$69.50. How many total games did the Jones family pay for?

- A. 4 games
- B. 5 games
- C. 12 games
- D. 14 games

- 9 Every month Jordan puts \$14 into her bank account. Her grandma puts additional money into Jordan's bank account every month. After 12 months, Jordan has \$216 in her bank account. The equation below can be used to determine  $x$ , the amount of money her grandma adds each month.

$$12(x + 14) = 216$$

How much did Jordan's grandma put into the account each month?

- A. \$4.00
- B. \$16.83
- C. \$17.45
- D. \$48.00

- 10 Twelve is added to a number and then the sum is multiplied by  $\frac{4}{5}$  to give 23.6. What is the number?

- A. 14.5
- B. 17.5
- C. 41.5
- D. 44.5

- 11 Kimtoya travels from New York to Florida by airplane. She pays a total of \$402 for her flight. This includes a base price of \$285 for the ticket plus a fee for each of her 3 pieces of checked baggage. To figure out how much the fee per bag is, she adds \$402 to \$285 and then divides this total by 3 to get \$173. Is this correct? Explain why or why not using the algebraic solution to the problem to support your answer.

- 12 A taxi company charges its passengers a fee of \$3.75 plus \$2.25 per mile. Melissa's taxi fare is \$38.85. How many miles did Melissa ride in the taxi?

- A. 6.475 miles
- B. 9.76 miles
- C. 10.36 miles
- D. 15.6 miles

Directions: Answer the following question(s).

13 Which expression is NOT equivalent to  $-20$ ?

- A.  $\frac{(-80)}{4}$
- B.  $-\left(\frac{80}{4}\right)$
- C.  $\left(\frac{-80}{-4}\right)$
- D.  $\frac{80}{(-4)}$

14 In a town in Canada, the temperature was  $20^\circ\text{F}$  at sunset. The temperature decreases by  $2^\circ$  every hour. How many hours does it take for the temperature to fall from  $20^\circ\text{F}$  to  $-6^\circ\text{F}$ ?

- A. 3 hours
- B. 7 hours
- C. 13 hours
- D. 14 hours

15 Which expression is equivalent to  $-\frac{7}{8} - \left(-\frac{3}{4}\right)$ ?

- A.  $\frac{7}{8} + \frac{3}{4}$
- B.  $-\frac{7}{8} + \frac{3}{4}$
- C.  $-\frac{7}{8} + \left(-\frac{3}{4}\right)$
- D.  $\frac{7}{8} + \left(-\frac{3}{4}\right)$

16 The temperature in a refrigerator is  $2.4^\circ\text{C}$ . The temperature in the attached freezer is  $-14.9^\circ\text{C}$ . What is the distance between  $2.4$  and  $-14.9$  on a number line?

- A. 11.5
- B. 12.5
- C. 16.3
- D. 17.3

17 What is the value of the expression below?

$$\left(1\frac{1}{2} \div \frac{3}{4}\right) + (0.87 - 1)$$

- A. 0.975
- B. 1.5367
- C. 1.87
- D. 2.13

18 Evaluate the expression below.

$$\frac{3}{5}(121 + 4.5) - \left(\frac{1}{10} - \frac{1}{2}\right)$$

- A. 74.7
- B. 74.9
- C. 75.7
- D. 77.5

19 Lexi's mom bought a value pack of snack crackers that contains  $48\frac{3}{4}$  ounces of crackers.

She divides this into servings of  $1\frac{1}{2}$  ounces each.

What is the total number of FULL servings Lexi's mom can make from the value pack?

- A. 32 servings
- B. 33 servings
- C. 72 servings
- D. 97 servings

20 Which number is equivalent to this expression?

$$1\frac{1}{2} - \left(-\frac{3}{5}\right) + 1\frac{1}{4}$$

- A.  $2\frac{3}{20}$
- B.  $2\frac{9}{20}$
- C.  $2\frac{5}{11}$
- D.  $3\frac{7}{20}$

Directions: Answer the following question(s).

- 21 Marco is solving a subtraction problem. He writes the first step as shown.

$$1\frac{1}{3} - 4\left(\frac{3}{4} + \frac{1}{2}\right)$$

$$1\frac{1}{3} - 3 - 2$$

- A. Name the property of operations Marco uses in his first step.
- B. Solve the subtraction problem.

- 22 Jesse opened a savings account with a deposit of \$70. He is planning to deposit an additional \$10 each week.

A. Write an equation that can be used to determine the number of weeks Jesse has to make deposits for the money in the account to equal \$200.

B. Solve your equation. Show your work.

Jesse wants to save enough money to be able to purchase a new bicycle that costs \$375.

C. Write an inequality that can be used to determine the number of weeks Jesse has to make deposits for the money in the account to be more than \$375.

D. Solve your inequality and show your work. Explain what your answer means in the context of the problem.

- 23 Margaret needs to find the value of the expression below.

$$\frac{1}{2} - \frac{3}{4}(11 + 5) + \frac{1}{4}$$

Which expression has the same value?

- A.  $\left(\frac{1}{2} + \frac{1}{4}\right) - 12$
- B.  $\frac{1}{2} - \frac{3}{4} - 16 - \frac{1}{4}$
- C.  $\frac{1}{2} - \left(\frac{3}{4} + \frac{1}{4}\right) - 16$
- D.  $\left(\frac{1}{2} + \frac{1}{4}\right) - \frac{33}{4} + 5$

- 24 What is the sum?

$$3\frac{1}{4} + 2\frac{1}{3} + 5\frac{3}{4} =$$

- A.  $10\frac{1}{3}$
- B.  $10\frac{5}{11}$
- C.  $11\frac{1}{3}$
- D.  $11\frac{5}{11}$

- 25 What is the value of the expression below?

$$(0 - 3) - 8\left(\frac{1}{2} + 4\right)$$

- A. -39
- B. 5
- C. -3
- D. 33

- 26 What is the value of the expression? Show work or explain your answer.

$$\frac{1}{4}\left(0.8 + \frac{1}{2}\right) - 0.4\left(\frac{5}{8} - 2\right)$$

Directions: Answer the following question(s).

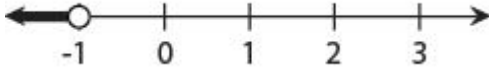
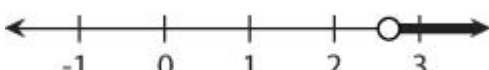


- 27 A parking garage in the city charges \$2.75 for the first hour and \$1.25 for each additional hour or part thereof. What is the maximum time in hours,  $x$ , that Tony can park his car at the garage if he wants to pay less than \$8?

- A.  $x < 4$   
 B.  $x < 5$   
 C.  $x < 6$   
 D.  $x < 7$

- 28 Look at the inequality below.

$$3n + 7 < 4$$

Which graph represents the solution to the inequality shown?

- A. 
- B. 
- C. 
- D. 

- 29 A community festival sells wristbands for unlimited carnival rides. Single tickets for the rides are also sold, and all rides have the same price. Ani is using the inequality below to decide if she should purchase the wristband for the festival.

$$12 - 0.75x \leq 0$$

Explain the meaning of the 12 and the 0.75 in Ani's inequality, and explain what  $x$  represents in the context of the situation. Solve the inequality to support your explanations.

- 30 A student solved an order of operations problem, as shown.

$$\begin{aligned} (14 - 20)^2 - 2(8 - 5) + 11 \\ (-6)^2 - 16 - 5 + 11 \\ 36 - 21 + 11 \\ 26 \end{aligned}$$

The student made an error. Explain what error the student made in the procedure, and find the correct value for the expression.

- 31 In science class a student was measuring the temperature of a solution during an experiment.

The solution started out at  $-2.7^\circ\text{C}$ . After three minutes the temperature had increased by  $17.8^\circ\text{C}$ . After three more minutes it had decreased by  $29.5^\circ\text{C}$ . Then after three more minutes it had increased by  $8.9^\circ\text{C}$ .

Which number represents final temperature in this experiment?

- A.  $-5.5^\circ\text{C}$   
 B.  $-2.8^\circ\text{C}$   
 C.  $2.8^\circ\text{C}$   
 D.  $5.5^\circ\text{C}$

- 32 Simplify.

$$2\frac{2}{3} - 1.25 + \frac{5}{6}$$

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

Directions: Answer the following question(s).

33 Alan's family has budgeted \$800 for summer activities. The family is close to both the Wild West amusement park and the Splash Town water park. The cost for a family summer pass is the same for each park.

A. Alan determines the family will have \$450 remaining in their summer budget if they purchase summer passes to both Wild West and Splash Town. Write an equation to show this mathematically, and use it to determine the cost of summer passes to Wild West and Splash Town.

B. Each of the four family members spends \$12 on each visit to Wild West or Splash Town for food and drinks. Given this, write an inequality that represents the greatest number of times Legend's family can go to Wild West and Splash Town.

C. Solve the inequality from part B and interpret the solution for the inequality you found.

34 Maya's new puppy weighs  $3\frac{5}{8}$  pounds. He will gain an average of  $\frac{3}{5}$  pound each week until he reaches his adult weight. Which equation can be used to predict his total weight,  $t$ , after  $w$  weeks?

A.  $w = \frac{29}{8}t + \frac{3}{5}$

B.  $t = \frac{29}{8}w + \frac{3}{5}$

C.  $w = \frac{3}{5}t + \frac{29}{8}$

D.  $t = \frac{3}{5}w + \frac{29}{8}$