

MODULE

6

Expressions and Equations

11. Beth has \$108.50 in her bank account. She buys x shirts for \$5.50 each. Write and solve an equation Beth can use to find how many shirts she can buy.

12. What is the solution to the equation below?

$$-\frac{2}{3}x = 20$$

13. Morgan used the equation below to find the number of mini netbooks she could purchase to fit her budget.

$$87.5x = 350$$

How many mini netbooks can Morgan buy?

14. Guillermo bought some reams of paper for \$5 each and a \$200 printer. He spent a total of \$450. Write and solve an equation to find the number of reams of paper Guillermo purchased.

15. Tallulah has 40 dimes and some nickels. The total value of her change is \$5.00. How many nickels does Tallulah have?

16. Dexter wrote the equation below to find the number of hours he would need to work at \$10 an hour to save \$300.

$$10x + 160 = 300$$

According to this equation, how much money did Dexter already have saved before he started working?

17. Nadya solved the equation $4x - 4 = 20$. Her work is shown below.

Step 1: $4x - 4 = 20$

Step 2: $4x = 16$

Step 3: $x = 4$

Where did Nadya make an error in her calculation? Explain.

18. Consuela earns a salary of \$40,000 per year plus a commission of \$1,000 for each car she sells. Write and solve an equation that shows the number of cars Consuela must sell in order to make \$60,000 in one year.

19. What is the absolute value of -200 ?

20. Shilpa earned 100 points in the first round of a game. She earned 20 points in each of the following rounds of the game. She ended the game with 400 points. Write and solve an equation to find the number of rounds Shilpa played.

21. Benjamin rides the train to work. He spends \$2.75 per ride. His monthly budget for riding the train is \$80. Write an equation that shows the number of times, n , Benjamin can ride the train each month.

22. Solve the equation below for y .

$$\frac{5}{6}y = 12$$

MODULE
7

Inequalities

Module Quiz: B

1. What is a value of y that satisfies the inequality below?

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

- A 42 C 38
B 39 D 36

2. Which of the following is a solution to the inequality below?

$$2x > 6$$

- A -3 C 3
B 2 D 5

3. Parvinder wants to save \$500 for a trip. Which inequality shows the least amount she must save each month for 6 months to accomplish this?

- A $6x \leq 500$ C $6x \geq 500$
B $6x < 500$ D $x \geq 500 + 6$

4. TJ earns a 20% commission on all sales plus a base salary of \$40,000. His total income last year was more than \$70,000. Which inequality can be used to calculate the minimum number of TJ's sales?

- A $40,000 + 0.2x \geq 70,000$
B $40,000 - 0.2x \geq 70,000$
C $0.2 + 40,000x \geq 70,000$
D $70,000 + 0.2x \geq 40,000$

5. Tony wants to buy a ticket for \$15.75. He has \$9.25. How much must he earn to buy the ticket?

- A at least \$6.00
B less than \$6.00
C at least \$6.50
D at least \$7.00

6. Peggy wants to run 5 miles in less than 60 minutes. What inequality shows what her rate should be?

- A 1 mi < 60 min C 1 mi < 12 min
B 3 mi < 60 min D 2 mi < 30 min

7. There are 125 members in the school marching band. The band wants to raise \$25,000 for a trip to a national competition. The school agreed to contribute \$5,000 towards the trip. Which inequality shows the amount of money that each band member should raise?

- A $125x + 25,000 \geq 5,000$
B $125x + 5,000 \geq 25,000$
C $5,000x + 125 \geq 25,000$
D $5,000x + 25,000 \geq 125$

8. Which of the following is the solution to the inequality $-2x - 4 \leq 11$?

- A $x \leq -\frac{15}{2}$ C $x \geq -\frac{15}{2}$
B $x \leq -\frac{7}{2}$ D $x \geq -\frac{7}{2}$

9. Which of the following ratios is **not** equivalent to 2:10?

- A $\frac{1}{5}$ C $\frac{4}{20}$
B $\frac{2}{5}$ D $\frac{6}{30}$

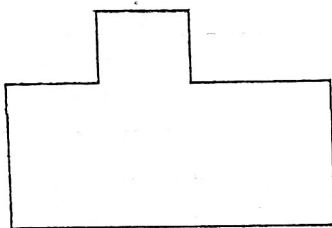
10. Which of the following values does **not** satisfy the inequality $-2x - 6 \leq 1$?

- A -4 C -2
B -3 D -1

11. Michele needs 30 ounces of pecans to bake some pies. Pecans are sold in 4-ounce packages. Which inequality could be used to find the least number of packages of pecans she has to buy?

- A $\frac{30}{x} \leq 4$
B $\frac{4}{x} \leq 30$
C $4x \geq 30$
D $x \leq 30 - 4$

Use the figure for 1–2.



- The figure shows a scale drawing of a room, and each square stands for 1 square foot. What is the area of the room in square yards?

A $10\frac{2}{3}$ C 96

B 32 D 126
- Now let the figure show a scale drawing of a park with the largest dimension equal to 63 meters. What is the scale?

A 1 unit : 3.11 m C 1 unit : 7 m

B 1 unit : 4.5 m D 1 unit : 10.5 m
- Two sides of a triangle measure 25 cm and 35 cm. Which of the following could be the measure of the third side?

A 3 cm C 8 cm

B 6 cm D 11 cm
- A triangle has two sides that measure 5 cm and 7 cm. Which of the following CANNOT be the measure of the third side?

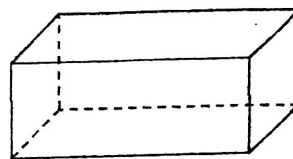
A 3 cm C 7 cm

B 5 cm D 12 cm
- A store sells towels for 25% off the regular price. The regular price of a beach towel is \$24.50. Which expression represents the sale price?

A $0.25x$ C $1.25x$

B $0.75x$ D $1.75x$

- The right rectangular prism below has a square base.



The following could be the shape of a cross section of the prism EXCEPT:

- A rectangle C parallelogram
- B circle D square
- Which of the following can form a cross section?

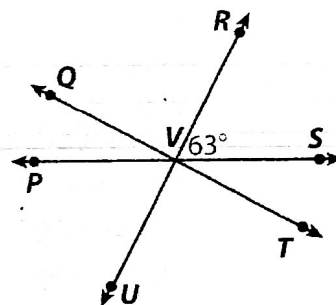
A a point and a triangle

B a plane and a cone

C a circle and a square

D a line and a point

Use the diagram for 8–9.



- What is the measure of $\angle PVU$?

A 15° C 63°

B 33° D 117°
- Which describes the relationship between $\angle QVP$ and $\angle PVU$?

A adjacent angles

B complementary angles

C supplementary angles

D vertical angles
- Joey cut a 10.5-foot length of rope into 6 pieces of equal length. How long was each piece of rope?

A 0.25 ft C 2.5 ft

B 1.75 ft D 6 ft