

Interpreting Word Problems
Writing Expressions and Inequalities

Name _____

School Projects You worked on a school project every day for 7 days. Each day, you worked for 2 hours in the morning and 4 hours in the afternoon. Which expression correctly represents the total number of hours you worked on the project? How many hours did you work on the project over the 7 days?

Which expression represents the total number of hours you worked on the project?

- A. $(7 \times 2) + 4$
- B. $(7 + 2) \times 4$
- C. $2 + 4 \times 7$
- D. $7 \times (2 + 4)$
- E. $2 \times 4 + 7$

You worked on the project for _____ hours over the 7 days.

2. **Event Planning** It costs \$125 to rent a room at an event center. The event center charges an additional \$11 per person for food. Write an algebraic expression for the total cost of an event for n people.

An algebraic expression for the cost of an event for n people is _____

3. Penny pays \$18 a month for her book club membership. With the membership, each book costs \$5. Write an algebraic expression for her total bill for one month if she buys b books that month.

An algebraic expression for the total bill for one month is _____

4. **Think About the Process** A flower shop charges \$29 for a bouquet. It costs an additional \$8 to include the vase. Last month, the shop sold b bouquets and v of the bouquets included the vase. What does each variable in this situation represent? Write an algebraic expression for the shop's total sales from bouquets and vases last month.

What does the variable b represent?

- The price of each bouquet
- The number of customers
- The number of bouquets sold last month
- The number of bouquets sold last month that included the vase
- The price of each vase

What does the variable v represent?

- The number of bouquets sold last month that included the vase
- The price of each vase
- The number of customers
- The price of each bouquet
- The number of bouquets sold last month

An algebraic expression for the shop's sales from bouquets last month is _____

5. **Entertainment** A group of 4 friends is planning a fun day trip. To raft down a river costs \$8 per person plus \$5 for transportation of the raft. An amusement park costs \$13 per person. A hot air balloon ride costs \$25 per person, but they have a \$40 group discount coupon.

Activity	Cost (\$)
Raft trip	$8n + 5 = 37$
Amusement Park	$13n = 37$
Balloon Ride	$25n - 40 = 37$

The table shows equations for the total cost of each activity for n people. Which activity should they choose if they want to spend exactly \$37?

The _____ would cost exactly \$37.

6. **Challenge** Last month, Simon's neighbors paid him to take care of their fish when they went on vacation. He spent \$5 of his earnings on an afternoon snack and \$15 on a new book. Afterward, he had no more than \$6 left. How can you best describe how much Simon's neighbors paid him?

Select the correct choice below and fill in the answer box to complete your choice.

- A. They paid him exactly \$ _____
- B. They paid him no less than \$ _____
- C. They paid him no more than \$ _____
7. A type of fish for your aquarium costs \$6 each. You can spend at most \$42. How many of these fish can you buy? Write an inequality to model the problem. Then solve the inequality to find the number of fish.

Let f be the number of fish you can buy. Which inequality models the problem?

- A. $f + 6 \leq 42$
- B. $6f \leq 42$
- C. $f + 6 \geq 42$
- D. $6f \geq 42$

How many of these fish can you buy?

You can buy _____

8. An athlete plans to exercise for 90 minutes. She will only swim and stretch. Write an equation to represent this situation.

Let x be the number of minutes the athlete spends swimming. Let y be the number of minutes stretching. Which equation represents this situation?

- A. $90 + y = x$
- B. $90 + x = y$
- C. $x - y = 90$
- D. $x + y = 90$

Interpreting Word Problems
Writing Expressions and Inequalities

Name Key

1. **School Projects** You worked on a school project every day for 7 days. Each day, you worked for 2 hours in the morning and 4 hours in the afternoon. Which expression correctly represents the total number of hours you worked on the project? How many hours did you work on the project over the 7 days?

Which expression represents the total number of hours you worked on the project?

- A. $(7 \times 2) + 4$
 B. $(7 + 2) \times 4$
 C. $2 + 4 \times 7$
 D. $7 \times (2 + 4)$
 E. $2 \times 4 + 7$

$$7 \text{ days} \times (4 \text{ hrs} + 2 \text{ hrs})$$

$$7 \times (6)$$

42 hours

You worked on the project for 42 hours over the 7 days.

2. **Event Planning** It costs \$125 to rent a room at an event center. The event center charges an additional \$11 per person for food. Write an algebraic expression for the total cost of an event for n people.

An algebraic expression for the cost of an event for n people is $125 + 11n$

3. Penny pays \$18 a month for her book club membership. With the membership, each book costs \$5. Write an algebraic expression for her total bill for one month if she buys b books that month.

An algebraic expression for the total bill for one month is $18 + 5b$

4. **Think About the Process** A flower shop charges \$29 for a bouquet. It costs an additional \$8 to include the vase. Last month, the shop sold b bouquets and v of the bouquets included the vase. What does each variable in this situation represent? Write an algebraic expression for the shop's total sales from bouquets and vases last month.

What does the variable b represent?

- The price of each bouquet
 The number of customers
 The number of bouquets sold last month
 The number of bouquets sold last month that included the vase
 The price of each vase

What does the variable v represent?

- The number of bouquets sold last month that included the vase
 The price of each vase
 The number of customers
 The price of each bouquet
 The number of bouquets sold last month

An algebraic expression for the shop's sales from bouquets last month is $29b + 8v$

5. **Entertainment** A group of 4 friends is planning a fun-day trip. To raft down a river costs \$8 per person plus \$5 for transportation of the raft. An amusement park costs \$13 per person. A hot air balloon ride costs \$25 per person, but they have a \$40 group discount coupon.

Activity	Cost (\$)
Raft trip	$8n + 5 = 37$
Amusement Park	$13n = 37$
Balloon Ride	$25n - 40 = 37$

The table shows equations for the total cost of each activity for n people. Which activity should they choose if they want to spend exactly \$37?

The Raft Trip would cost exactly \$37.

Raft Trip	Amu. P.	B.R.
$8(4) + 5$	$13(4)$	$25(4) - 40$
$\underline{32} + 5$	$\underline{52}$	$\underline{100} - 40$
$\underline{\$37}$		$\underline{\$60}$

6. **Challenge** Last month, Simon's neighbors paid him to take care of their fish when they went on vacation. He spent \$5 of his earnings on an afternoon snack and \$15 on a new book. Afterward, he had no more than \$6 left. How can you best describe how much Simon's neighbors paid him?

Select the correct choice below and fill in the answer box to complete your choice.

- A. They paid him exactly \$ _____
- B. They paid him no less than \$ _____
- C. They paid him no more than \$ 26

\$5 on Snack
\$15 on Book
no more than \$6 left over
Started with no more than \$26

7. A type of fish for your aquarium costs \$6 each. You can spend at most \$42. How many of these fish can you buy? Write an inequality to model the problem. Then solve the inequality to find the number of fish.

Let f be the number of fish you can buy. Which inequality models the problem?

- A. $f + 6 \leq 42$
- B. $6f \leq 42$
- C. $f + 6 \geq 42$
- D. $6f \geq 42$

at most means \leq

$$6 \cdot f \leq 42$$

$$\div 6 \qquad \div 6$$

$$f \leq 7$$

How many of these fish can you buy?

You can buy at most 7 fish

8. An athlete plans to exercise for 90 minutes. She will only swim and stretch. Write an equation to represent this situation.

Let x be the number of minutes the athlete spends swimming. Let y be the number of minutes stretching. Which equation represents this situation?

- A. $90 + y = x$
- B. $90 + x = y$
- C. $x - y = 90$
- D. $x + y = 90$