Pictures and Stories: Worked Answers

Each problem solved the way the lesson does it.

Name: _____ Date: _____

1. Two rectangles are both h tall. One is 4 wide and one is 5 wide. Write the total area as one term. What does the coefficient tell you?
   - $4h + 5h = (4 + 5)h = 9h$.

   Answer: 9h. The 9 is the total width.

2. Six friends each buy a ticket for t dollars and a 2 dollar snack. The total is $6t + 12$. What does the 12 mean?
   - $6(t + 2) = 6t + 6 \times 2$.

   Answer: The 12 is what all six snacks cost together.

3. A rectangle is w feet wide and 8 feet long. Its perimeter is $2w + 16$. Write it in factored form. What does the part in parentheses mean?
   - GCF 2: $2(w + 8)$.
   - $w + 8$ is the width plus the length.

   Answer: $2(w + 8)$. $w + 8$ is halfway around.

4. 25 students each pay x dollars for a shirt and 3 dollars for a hat. Write the total two ways.
   - Each pays $x + 3$: $25(x + 3)$.
   - Expand: $25x + 75$.

   Answer: $25(x + 3)$ or $25x + 75$ dollars

5. Sam reads r pages a day for 4 days, then 7 more pages: $4r + 7$. Can it be factored with a GCF bigger than 1?
   - The GCF of 4 and 7 is 1.

   Answer: No. $4r + 7$ is already the most useful form.

6 Which form of $3(n + 4) = 3n + 12$ shows three equal groups?

- The factored form shows the groups.

Answer: $3(n + 4)$

7 A garden has two square beds, each s feet on a side, and a path. The total fenced length is $4s + 4s + 10$. Write it as one expression with a factored part.

- $4s + 4s = 8s$.
- $8s + 10 = 2(4s + 5)$.

Answer: $8s + 10$, or $2(4s + 5)$

8 Jo says $5(x + 2)$ is better than $5x + 10$ because it is shorter. Is shorter always better?

- Each form tells a different story: groups or pieces.

Answer: No. Pick the form that answers the question.