

# Pattern and Relations 6

Name: \_\_\_\_\_

21. When  $x^2 - 9x - 4$  is subtracted from the sum of  $5x^2 - 8x + 2$  and  $2x^2 - 3x - 7$ , the result is
- A.  $x^2 - 20x - 9$
  - B.  $2x^2 + 4x + 13$
  - C.  $6x^2 - 2x - 1$
  - D.  $8x^2 - 20x - 9$

Use the following information to answer question 27.

Jim simplifies the expression  $\frac{5(x + 2) - (8 - x)}{2}$  as shown below.

**Step 1**  $\frac{5x + 10 - 8 - x}{2}$

**Step 2**  $\frac{4x + 2}{2}$

**Step 3**  $\frac{4x}{2} + \frac{2}{2}$

**Step 4**  $2x + 1$

27. In which step did Jim make an error when simplifying the expression?
- A. Step 1
  - B. Step 2
  - C. Step 3
  - D. Step 4

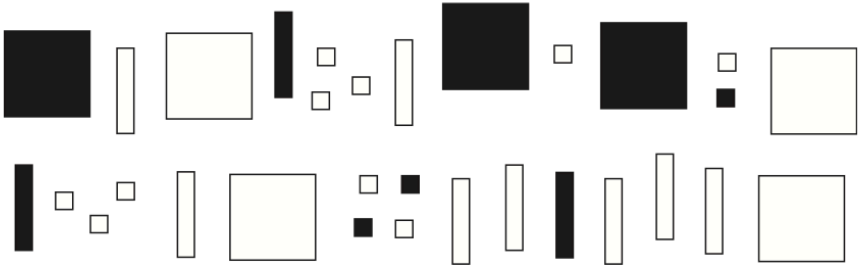
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Name: \_\_\_\_\_

Use the following information to answer question 29.

**Legend**

■ = 1	▬ = $x$	■ = $x^2$
□ = -1	▬ = $-x$	□ = $-x^2$

29. Which of the following polynomial expressions could be added to the expression shown above to result in a sum that contains only a constant term?
- A.  $x^2 + 5x + 3$   
 B.  $4x^2 + 8x$   
 C.  $-x^2 - 5x - 3$   
 D.  $-4x^2 - 8x$
26. When the expression  $(x^2 - 5x + 4) - (3x^2 + 8x - 20)$  is simplified, the result is
- A.  $-2x^2 - 13x + 24$   
 B.  $-2x^2 - 3x + 16$   
 C.  $2x^2 + 13x - 24$   
 D.  $2x^2 + 3x - 16$

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Use the following information to answer question 29.

Legend		
■ = 1	▮ = $x$	■ = $x^2$
□ = -1	▯ = $-x$	□ = $-x^2$

29. Which of the following pairs of expressions represents like terms?

A.  $3x$  and ■■ ■

B.  $-6x^2$  and □□□□

C.  $-2(4x)$  and ■■■■■

D.  $4(-1x)$  and ■■■ ■■■ ■■■

Use the following information to answer question 36.

Legend		
■ = 1	▮ = $x$	■ = $x^2$
□ = -1	▯ = $-x$	□ = $-x^2$

Polynomial 1: ■■ □ ▮ ▮ ▮ ▮ □ □

Polynomial 2: ▮ ▮ ▮ ▮ ▮ □ □ □ □

Polynomial 3: ■■ ▮ ▮ ▮ □ ■■ □

Polynomial 4: ?

36. Which of the following expressions could represent Polynomial 4 if the sum of all four expressions is  $6x$ ?

A.  $9x^2 - 5x - 1$

B.  $3x^2 + x - 2$

C.  $-x^2 - x + 5$

D.  $-3x^2 + 11x + 1$