

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. $8x^2 - 20x - 9$

$$\begin{aligned} & (5x^2 - 8x + 2) + (2x^2 - 3x - 7) - (x^2 - 9x - 4) \\ & 5x^2 + 2x^2 - 8x - 3x + 2 - 7 - x^2 + 9x + 4 \\ & 6x^2 - 2x - 1 \end{aligned}$$

Use the following information to answer question 27.

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

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

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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Use the following information to answer question 29.

first cancel terms

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. $-4x^2 - 8x$

*-x² - 5x - 7
need to get rid of these terms
only "A" does this*

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. $2x^2 + 3x - 16$

*x² - 5x + 4 - 3x² - 8x + 20
-2x² - 13x + 24*

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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 


$3x^2$

B. $-6x^2$ and 

-4

C. $-2(4x)$ and 

5


D. $4(-1x)$ and 


$3x$


both terms are like


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: ? 

need to get rid of the $3(-x^2)$
∴ must be "B"

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