Combining Like Terms Practice Name _____

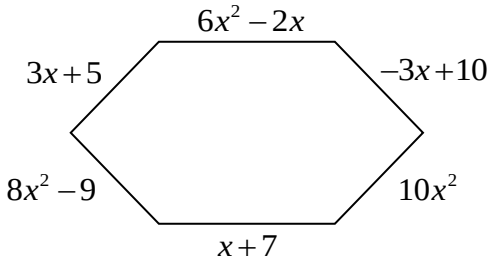
Simplify. Write each answer in simplest standard form.

1. What is the sum of $-2\left(4x^3+6x^2+2x-3\right)$ and $3x^3+3x^2-5x-5$?

2. Simplify the expression $(x^2-5x-2)-(-6x^2-7x-3)$.

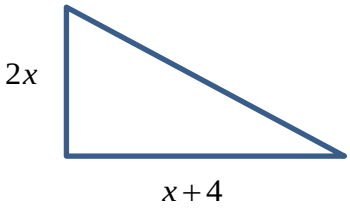
3. Subtract $2x^2+3xy-6$ from $x^2-7xy+2$.

4. Express the Perimeter in simplest form.

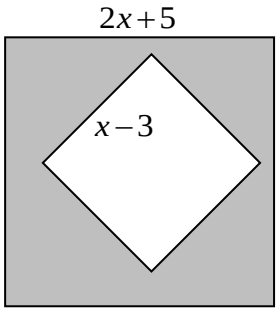


5. Express the Area in simplest form.

$A=\frac{1}{2}bh$



6. The accompanying diagram shows a square with side $(x-3)$ inside a square with side $(2x+5)$. Express the area of the shaded region in terms of x in simplest form.



7. A plastic storage box in the shape of a rectangular prism has a length of $x + 3$, a width of $x - 4$, and a height of 5. Represent the surface area of the box as a trinomial in terms of x.

(Hint: The equation for the surface area of a rectangular prism is $SA = 2lw + 2lh + 2wh$)

Combining Like Terms Practice Name Key

Simplify. Write each answer in simplest standard form.

1. What is the sum of $-2(4x^3+6x^2+2x-3)$ and $3x^3+3x^2-5x-5$?

$-8x^3 - 12x^2 - 4x + 6 + 3x^3 + 3x^2 - 5x - 5$

$-5x^3 - 9x^2 - 9x + 1$

2. Simplify the expression $(x^2-5x-2)-(-6x^2-7x-3)$.

$x^2 - 5x - 2 + 6x^2 + 7x + 3$

$7x^2 + 2x + 1$

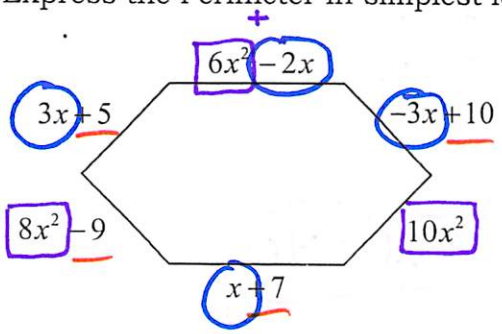
3. Subtract $2x^2+3xy-6$ from $x^2-7xy+2$.

$x^2 - 7xy + 2 - (2x^2 + 3xy - 6)$

$x^2 - 7xy + 2 - 2x^2 - 3xy + 6$

$-x^2 - 10xy + 8$

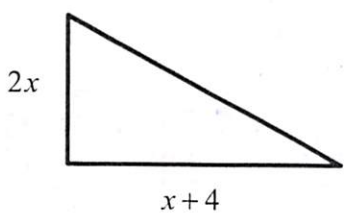
4. Express the Perimeter in simplest form.



$P = 24x^2 - x + 13$

5. Express the Area in simplest form.

$A=\frac{1}{2}bh$

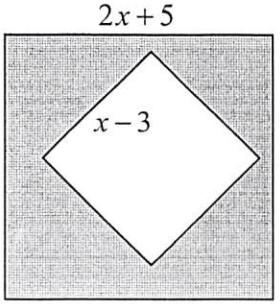


$A = \frac{1}{2} \cdot (2x) \cdot (x+4)$

$x \cdot (x+4)$

$A = x^2 + 4x$

6. The accompanying diagram shows a square with side $(x-3)$ inside a square with side $(2x+5)$. Express the area of the shaded region in terms of x in simplest form.



Area = Big Area □ − Small Area □

b · h b · h

$= (2x+5)(2x+5) - [(x-3)(x-3)]$

$= 4x^2+10x+10x+25 - [x^2-3x-3x+9]$

$= 4x^2+20x+25-x^2+6x-9$

Shaded Area $= 3x^2+26x+16$

7. A plastic storage box in the shape of a rectangular prism has a length of $x + 3$, a width of $x - 4$, and a height of 5. Represent the surface area of the box as a trinomial in terms of x.

(Hint: The equation for the surface area of a rectangular prism is $SA = 2lw + 2lh + 2wh$)

L = x + 3
W = x − 4
H = 5

$SA: 2(x+3)(x-4) + 2(x+3)(5) + 2(x-4)(5)$

$2(x^2+3x-4x-12)$ $10(x+3)$ $10(x-4)$

$-x$

$2x^2-2x-8x-24+10x+30+10x-40$

$SA: 2x^2+10x-34$