Name:_____

Simplify each of the following expressions.

1. $3x(5x - 2)$

  A. $15x^2 - x$

  B. $15x^2 - 6x$

  C. $15x^2 + 11x$

  D. $15x^2 + x$

2. $(4x + 2)(x - 7)$

  A. $4x^2 - 26x - 14$

  B. $4x^2 - 30x - 9$

  C. $4x^2 + 26x - 14$

  D. $4x^2 - 26x - 9$

3. $(5p + 7q)(-2p + 8q)$

  A. $-10p^2 + 56q^2$

  B. $-10p^2 + 26pq + 56q^2$

  C. $-10p^2 + 54pq + 56q^2$

  D. $3p + 15q$

4. $(5x - 1)(5x + 1)$

  A. $25x^2 - 1$

  B. $25x^2 + 10x - 1$

  C. $25x^2 - 2$

  D. $25x^2 - 10x - 1$

5. $(2x - 6)^2$

  A. $4x^2 + 24x + 36$

  B. $4x^2 - 24x + 36$

  C. $4x^2 - 36$

  D. $4x^2 + 36$

6. $(4x^2 + 7x - 1)(5x + 9)$

  A. $20x^3 + x^2 - 68x - 9$

  B. $20x^3 + 71x^2 + 68x - 9$

  C. $20x^3 + 71x^2 + 58x - 9$

  D. $20x^3 + x^2 + 58x - 9$

7. $(6x^2 + 6x + 7)(4x - 5)$

  A. $24x^3 - 6x^2 - 2x + 35$

  B. $24x^3 - 54x^2 + 58x - 35$

  C. $24x^3 - 6x^2 - 2x - 35$

  D. $24x^3 + 54x^2 + 58x + 35$

8. $\left(6x^2 + 2x - 9\right) + \left(8x^2 - 5x + 1\right) - (3x - 4)(7x + 2)$

$\boxed{}\ x^2 + \boxed{}\ x + \boxed{}$

9. A rectangular garden has a length of (3x + 30) units and a width of (x + 20) units. The garden also consists of a walkway, which has an area of $(x^2 + 30x + 200)$ square units. Complete the polynomial expression that represents the total planting area in the garden.

Total Planting Area = ($\boxed{2}$ x^2 + $\boxed{60}$ x + $\boxed{400}$) square units

10. A wall with an area of $(3x^2 + 4x + 1)$ square units has a rectangular window that has a width of (x + 2) units and a length of (x + 1) units. The wall also has a built-in shelving unit that occupies an area of $(x^2 + 5x + 6)$ square units of wall space. If the wall is to be covered with wallpaper, how much wallpaper will be required?

($\boxed{1}$ x^2 - $\boxed{4}$ x - $\boxed{7}$) square units

11. A polynomial expression is shown below.

$(rx + 2)(5x^2 - 25) + 10(x^2 + 5)$

The expression is simplified to $-20x^3 + 20x^2 + 100x$.

What is the value of r?

- A. 4
- B. -20
- C. -4
- D. 20