Distribute.

1. $-6xy\,(4x^2 - 5xy - 2y^2)$

$-24x^3y + 30x^2y^2 + 12xy^3$

Combine like terms.

(In this case, there are no like terms.)

Answer:

$-24x^3y + 30x^2y^2 + 12xy^3$

2. Find the area of a rectangle with a length of $(3x + 2)$ and a width of $(4x^2 - 7x + 5)$.

$(3x+2)(4x^2-7x+5)$

Area of a rectangle = length x width.

Distribute each term of the first polynomial to every term of the second polynomial.

$12x^3 - 21x^2 + 15x + 8x^2 - 14x + 10$

Combine like terms.

$12x^3 - 21x^2 + 8x^2 + 15x - 14x + 10$

$A = 12x^3 - 13x^2 + x + 10$ square units ← Answer

3. $(4x + 3)(3x^2 - 5x - 6)$

$(4x+3)(3x^2-5x-6)$

Distribute each term of the first polynomial to every term of the second polynomial.

$12x^3 - 20x^2 - 24x + 9x^2 - 15x - 18$

Combine like terms.

$12x^3 - 20x^2 + 9x^2 - 24x - 15x - 18$

$12x^3 - 11x^2 - 39x - 18$ ← answer

4. Find the area of a rectangle with a length of $(4x + 3)$ and width of $(7x-5)$.

$A = (4x+3)(7x-5)$

Area of a rectangle = length x width.

Distribute each term of the first binomial to every term of the second binomial. (FOIL)

$28x^2 - 20x + 21x - 15$

Combine like terms.

$28x^2 - 20x + 21x - 15$

$28x^2 + x - 15$ ← Answer