

Algebraic Expressions

1. Which of the following are monomials? a) $-4xy$ b) $\frac{1}{2}x^4y^{1.5}$ c) x^{-5} d) x

2. What is the degree of the following monomials?

a) $-3x^2y$ _____ b) $7x^2y^3$ _____

3. Determine the numerical value of the following expressions if $a = 2$, $b = -2$.

a) $5a - 3b =$ _____ b) $(a - b)^2 =$ _____

4. Simplify the following expressions.

a) $(2x^2 - 5x + 4) + (9x^2 - 6x) =$ _____

b) $(5a - 2b + c) - (4a + 5b - 8c) + (7a + 3) =$ _____

c) $2x(4x^2 - 5x + 1) =$ _____

d) $(-2x + 3)(5x - 4) =$ _____

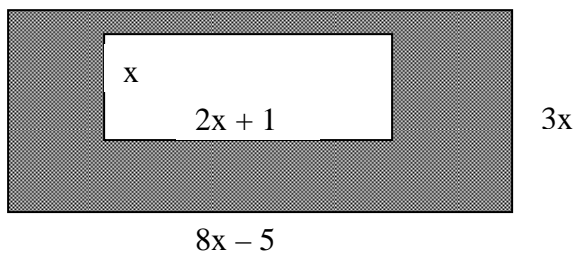
e) $(3x^2 - 1)^2 =$ _____

f) $(12x^3 - 6x^2 - 9x) \div 3x =$ _____

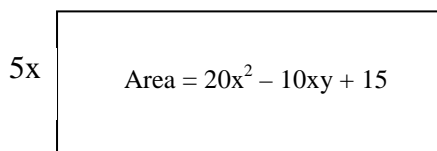
5. Consider the polynomials $A = 2x^2 - 4$, $B = 5x^2 + 3x - 1$, $C = 4x^2 - 1x + 3$

Find $A - B - C =$ _____

6. Determine the area of the shaded region.



7. Find the missing length.



8. Factor the following polynomials by removing the greatest common factor.

a) $8a^2 + 20a =$ _____ b) $15a^3 + 40a^2 + 5a =$ _____