Practice Exercises on Factoring Polynomials with Common Monomial Factor

A. Factoring Integers

Completely factor the following numbers. One point each.

1. 28
2. 36
3. 60
4. 45
5. 54

B. Finding the Common Factor

Find the greatest common monomial factor of each polynomial. One point each.

1. $6x^2 + 3xy$
2. $24abx + 20ab$
3. $15x^2y - 6xy$
4. $36ab + 60b$
5. $18a^3 - 24a^2$
6. $12x^2y + 12xy^2 + 24xyz$
7. $3x^4 - 6x^3y$
8. $9x^2 + 9xy$
9. $16mnx + 28mn$
10. $15x^2 + 20x$

C. Factoring Polynomials with Common Monomial Factor

Factor each polynomial completely. One point each.

1. $6x^2 + 18x^3y$
2. $14a^2bx + 28ab$
3. $25x^2y - 60xy^2$
4. $26ab^2 + 52b^3$
5. $18a^2 - 72a^4$
6. $22x^3y + 11x^2y^2 + 44xyz$
7. $32x^2 - 64x^3y$
8. $90x^2y^3 + 18x^3y$
9. $36mn^2x + 81mn^3$
10. $25x^2y + 30xy^2$

Answer Key

A. Factoring Integers

1. $28 = (2^2)(7)$
2. $36 = (2^2)(3^2)$
3. $60 = (2^2)(3)(5)$
4. $45 = (3^2)(5)$
5. $54 = (2)(3^3)$

B. Finding the Common Factor

1. $3x$
2. $4ab$
3. $3xy$
4. $12b$
5. $6a^2$
6. $12xy$
7. $3x^3$
8. $9x$
9. $4mn$
10. $5x$

C. Factoring Polynomials with Common Monomial Factor

1. $6x^2 + 18x^3y = 6x^2\left(3xy + 1\right)$
2. $14a^2bx + 28ab = 14ab\left(ax + 2\right)$
3. $25x^2y - 60xy^2 = 5xy\left(5x - 12y\right)$
4. $26ab^2 + 52b^3 = 26b^2\left(a + 2b\right)$
5. $18a^2 - 72a^4 = 18a^2\left(1 - 4a^2\right)$
6. $22x^3y + 11x^2y^2 + 44xyz = 11xy\left(2x^2 + xy + 4z\right)$
7. $32x^2 - 64x^3y = 32x^2\left(1 - 2xy\right)$
8. $90x^2y^3 + 18x^3y = 18x^2y\left(x + 5y^2\right)$
9. $36mn^2x + 81mn^3 = 9mn^2\left(9n + 4x\right)$
10. $25x^2y + 30xy^2 = 5xy\left(5x + 6y\right)$