UNIT 5 • POLYNOMIAL OPERATIONS AND QUADRATIC FUNCTIONS   A–SSE.3*
Lesson 5.3: Factoring Expressions by the Greatest Common Factor

Practice 5.3: Factoring Expressions by the Greatest Common Factor   A

For problems 1–6, factor each expression by the greatest common factor if a common factor exists, or state that the terms have no common factor.

1. $3x^3 + 5x^2$

2. $2x^2y - 8xy^2$

3. $y^4 + 2y^2$

4. $x^2 - 9x + 3$

5. $x^3y^2 - 2x^2y^3 + 5xy^2$

6. $7x - 21x^2y$

Use what you have learned about factoring polynomials by the GCF to complete problems 7 and 8.

7. Christopher has two bags of marbles. The number of marbles in the first bag can be represented by the monomial $45x^2y$, and the number of marbles in the other bag can be represented by $60x^3y^2$. What is the GCF of these two monomials?

8. An equilateral triangle has a perimeter of $(15x^3 + 33y^2)$ feet. What is the length of each side?

Use the following information to complete problems 9 and 10.

Samuel and Ariana are competing in a speed round for an open position on the math team. To win the spot, each student must factor the same polynomial expression, $12xyz^2 + 16x^2y^2z - 32x^2yz$, by finding the GCF.

9. Samuel's final result was $2xyz(6z + 8xy - 16x)$. Explain his error, if any.

10. Ariana's final result was $4xyz^2(3x + 4xy - 8xyz)$. Explain her error, if any.