

Chapter 5 Mastery Test A

Directions Circle the answer that best completes the statement.

- The product of $(x + y)^2$ is _____.
A $x^2 + y^2$
B $2x^2 + xy + 2y^2$
C $x^2 + xy + y^2$
D $x^2 + 2xy + y^2$
- For all real numbers x and y , $(\frac{x}{y})(\frac{y}{x}) =$ _____.
A xy
B 0
C 1
D $\frac{x^2}{y^2}$
- In $12x^3y + 2x^2y + xy - 8$, 12 is a _____.
A variable
B factor
C constant
D coefficient
- The factors of $(x^3 - y^3)$ are _____.
A $(x^2 - y^2)(x - y)$
B $(x - y)(x^2 + xy + y^2)$
C $(x - y)(x^2 - xy + y^2)$
D $(x + y)(x^2 - xy - y^2)$
- The quotient of $\frac{(x^3 + y^3)}{(x + y)}$ is _____.
A $x^2 - xy + y^2$
B $x^3 + y^3$
C $x + y$
D $x^2 + y^2$

Directions Divide by factoring.

- $(12x^3y^2 + 8x^2y + 4xy^2) \div 4xy$ _____
- $(125a^3 - 8b^3) \div (5a - 2b)$ _____
- $(4x + 5)^3 \div (4x + 5)$ _____
- $(100x^2 - 9y^2) \div (10x + 3y)$ _____

Chapter 5 Mastery Test A, continued

Directions Find each sum or difference.

10. $(3x^4 + 5x^3 - 2x^2 + 6) + (-4x^4 - 8x - 3)$ _____

11. $(9a^3b - 3a^2b^2 + 8) + (5a^3b - 6a^2b^2 + 2ab^3 - 1)$ _____

12. $(5x^5y^4 - 2x^4y^3 + x^3y^2 - 4) - (6x^4y^3 - 2x^3y^2 - 6)$ _____

13. $(7x^3y^2 - 4x^2y^3 + xy^4 - 3) - (-x^2y^3 + 3x^3y - 2xy^4 + 4)$ _____

Directions Find the products.

14. $(3a + 4b)^2$ _____

15. $(4x - 3y)^2$ _____

16. $(2x + 3)^3$ _____

17. $(5x - 2y)^3$ _____

18. $(x + y)(x - y + 2)$ _____

19. $(x - 3y)(x^2 - 2x + 6)$ _____

20. $(3x - y + 2)(x - 2y + 3z)$ _____

Directions Simplify the complex fractions.

21. $\frac{\frac{1}{2}}{\frac{3}{4}}$ _____

24. $\frac{\frac{4y^3}{x}}{\frac{2x}{y}}$ _____

22. $\frac{\frac{3x}{4}}{\frac{6x}{12}}$ _____

25. $\frac{\frac{x^5}{9}}{\frac{2}{x^2}}$ _____

23. $\frac{\frac{8x^2}{3}}{\frac{2x}{9}}$ _____