

5.5 Choosing a Factoring Method

Name _____

<p>Select which description matches each of the following polynomial types.</p> <p>(a) Trinomial with no Greatest Common Factor (b) Trinomial with Greatest Common Factor (c) Polynomial with Four Terms</p> <p>(d) Difference of Squares (e) Sum of Cubes (f) Prime Binomial</p>	
1. $4x^2 - 25$	2. $2x^2 + 3x - 5$
3. $ax - 2x + 3a - 6$	4. $27x^3 + 64$
5. $x^2 + 16$	6. $3x^2 + 6x - 45$
<p>Select the phrase that correctly completes each of the following statements.</p> <p>(a) try to factor by grouping or by the box method (b) rewrite the middle term as a sum of two terms and then factor the polynomial with 4 terms (c) try to factor out a GCF</p> <p>(d) difference of squares or sum or difference of cubes (e) see if anything factors further (f) multiply the factors to verify that the product is equal to the original polynomial</p>	
7. The first step you should take when factoring a polynomial is to _____.	8. For a binomial with no common factors, determine if it is a _____.
9. For a polynomial with 4 terms having no common factor _____.	10. To check that you have factored a polynomial correctly, _____.
11. One possible method for factoring a trinomial is to _____.	12. After factoring a polynomial, you should _____.
<p>Answers: 1. (d); 3. (c); 5. (f); 7. (c); 9. (a); 11. (b)</p>	

Factor each polynomial completely.

13. $2x^2 - 128$

14. $6x^2 - 54$

15. $2x^2 + 162$

16. $3x^2 + 48$

17. $x^2 - 11x + 24$

18. $x^2 + 11x - 12$

19. $27x^3 + 1$

20. $a^3 + 8$

Answers: **13.** $2(x+8)(x-8)$; **15.** $2(x^2+81)$; **17.** $(x-3)(x-8)$; **19.** $(3x+1)(9x^2-3x+1)$

Factor each polynomial completely.

21. $4ax - 15 + 6a - 10x$

22. $2x^2 + x - 9 - 18x$

23. $6x^2 + x - 7$

24. $2x^2 - 11x - 6$

25. $x^4 - 16$

26. $x^4 - y^4$

27. $x^6 - 1$

28. $64 - y^6$

Answers: **21.** $(2a - 5)(2x + 3)$; **23.** $(6x + 7)(x - 1)$; **25.** $(x^2 + 4)(x + 2)(x - 2)$; **27.** $(x + 1)(x^2 - x + 1)(x - 1)(x^2 + x + 1)$