EXTRA PRACTICE 21
Factoring Polynomials
Use after Sections 4.3 - 4.6 **Name**_____

Examples. Factor completely.

a) $4x^3 + 12x^2 - 8x = 4x(x^2 + 3x - 2)$

b) $5x^3 - 3x^2 + 20x - 12 = x^2(5x - 3) + 4(5x - 3) = (5x - 3)(x^2 + 4)$

c) $x^2 + 2x - 35 = (x + 7)(x - 5)$

d) $3x^2 - 5x - 2 = (3x + 1)(x - 2)$

e) $x^2 - 18x + 81 = (x - 9)^2$

f) $4x^2 - 25y^2 = (2x + 5y)(2x - 5y)$

Factor.

1. $x^2 - 6x - 16 =$ _____

2. $4y^2 + 7y - 2 =$ _____

3. $5a^3 - 25a^2 + 15a =$ _____

4. $9x^2 - 16 =$ _____

5. $x^2 - 64 =$ _____

6. $a^2 + 12a + 27 =$ _____

7. $6x^2 + 12x + 6 =$ _____

8. $x^3 + 2x^2 - 5x - 10 =$ _____

9. $x^2 - 10x + 21 =$ _____

10. $12x^5 - 6x^3 + 3x^2 =$ _____

11. $6y^2 - 54 =$ _____

12. $4y^2 - 17y - 15 =$ _____

13. $6x^2 - 7x + 2 =$ _____

14. $5x^2 - 5 =$ _____

15. $y^5 + 3y^3 + 4y^2 + 12 =$ _____

16. $x^2 - 7x - 18 =$ _____

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EXTRA PRACTICE 21 (continued)
Factoring Polynomials
Use after Sections 4.3 - 4.6

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17. $x^2 - 8x + 16 =$ _____

18. $a^2 - 9a + 14 =$ _____

19. $49x^2 - 1 =$ _____

20. $8x^4 - 4x^3 + 12x^2 =$ _____

21. $y^2 + 10y + 25 =$ _____

22. $3a^2 + 12a - 3 =$ _____

23. $x^4 - 81 =$ _____

24. $9y^2 - 12y + 4 =$ _____

25. $a^2 + 11a + 30 =$ _____

26. $8t^2 + 2t - 3 =$ _____

27. $75x^2 - 30x + 3 =$ _____

28. $3t^2 - 8t - 3 =$ _____

29. $x^2 + 3x + 8x + 24 =$ _____

30. $y^2 - 22y + 121 =$ _____

31. $x^2 - 2x - 3 =$ _____

32. $4x^2 - 24x + 36 =$ _____

33. $y^2 - 6y + 5 =$ _____

34. $25t^2 - 4 =$ _____

35. $14x^3 - 7x^2 + 21x =$ _____

36. $9x^2 + 42x + 49 =$ _____

37. $9x^2 - 81 =$ _____

38. $12x^2 + 4x - 5 =$ _____

39. $49a^2 - 28a + 4 =$ _____

40. $8x^2 - 29x - 12 =$ _____

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