Homework: Factoring Polynomials

In Problems 1-5, factor out the greatest common factor

1. $7x-14$	2. $5x^2+15x$
3. $4x^5-8x^4+20x^3$	4. $-9x+18$
5. $2x(x+3)+5(x+3)$	

In Problems 6-8, factor by grouping

6. $x^3-3x^2+4x-12$	7. x^3+2x^2+3x+6
8. x^3+x^2-3x-3	

In Problems 9-19, factor each trinomial

9. $x^2+12x+32$	10. $x^2-6x-27$
11. $x^2-10x+21$	12. $5x^2-13x-6$
13. $7x^2+4x-20$	14. $35x^2-17x+2$
15. $12x^2+31x+7$	16. $25x^2-15x+2$
17. $27x^2-6x-8$	18. $4x^2+5xy+y^2$
19. $5x^2-24xy-5y^2$	

In Problems 20-24, factor the difference of two squares

20. x^2-64	21. $9x^2-16$
22. $4x^2-9y^2$	23. x^4-81
24. $81x^4-16$	

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In Problems 25-28, factor using the formula for the sum or difference of two cubes

25. x^3+8	26. x^3-125
27. $27x^3-8$	28. $8x^3+27y^3$

In Problems 29-31, factor completely

29. $5x^3-20x$	30. $5x^2-15x-20$
31. $x^3+7x^2-4x-28$	