Name Keys Date

Formulas To Know

Difference of Two Squares ⇨ $a^2 - b^2 = (a + b)(a - b)$

Sum of Two Cubes ⇨ $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

Difference of Two Cubes ⇨ $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Factor by using GCF.

1. $3a^2 + 3a - 9$ $3(a^2+a-3)$
2. $2x^4 + 14x^3$
3. $25a^2 - 35a$ $5a(5a-7)$
4. $4x^3 - 8x^2 + 16x$
5. $30w^2 - 12hw + 6h^2w^2$ $6w(5w - 2h + h^2w)$
6. $4a^2 - 4ac + 4c^2$
7. $12a^3 + 6a^2b + 36ab$ $6a(2a^2+ab+6b)$
8. $28t^3s + 8t^4s$

Factor by using Difference of Two Squares.

9. $4a^2 - 1$ $(2a-1)(2a+1)$
10. $9x^2 + 1$
11. $c^2 - 4d^2$ $(c-2d)(c+2d)$
12. $16a^2 - 9b^2$
13. $4a^2 - 49c^2$ $(2a-7c)(2a+7c)$
14. $y^2 - 81z^2$
15. $4y^4 - 25y^6$ $(2y^2-5y^3)(2y^2+5y^3)$
16. $64x^8 - 36$
17. $x^4 - 4$ $(x^2-2)(x^2+2)$

Factor by using Sum or Difference of Cubes.

18. $c^3 + 8$ $(c+2)(c^2-2c+4)$
19. $d^3 + 64$ $(d+4)(d^2-4d+16)$
20. $8s^3 + 343t^3$
21. $1000f^3 + 27g^3$ $(10f+3g)(100f^2-30fg+9g^2)$
22. $m^3 - 125$
23. $f^3 - 216$ $(f-6)(f^2+6f+36)$
24. $27x^3 - y^3$
25. $8x^3 - 27y^3$ $(2x-3y)(4x^2+6xy+9y^2)$
26. $64x^6 - 27y^9$

Mixed Practice.

27. $10axc + 20cay - 30acz$ $10ac(x+2y-3z)$
28. $12s^6 + 8s^7 - 32s^8 + 36s^9$
29. $a^4 - 4$ $(a^2+2)(a^2-2)$
30. $b^6 - 8$
31. $4f^4 - 20e^2f^2 + 25e^4$ $4f^4-20e^2f^2+25e^4$
32. $x^6 + 2x^3y^2 + xy^4$
33. $36x^6 - 25y^4$ $(6x^3+5y^2)(6x^3-5y^2)$
34. $100 - 81t^6$
35. $y^6 - 64z^8$ $(y^3+8z^4)(y^3-8z^4)$
36. $8x^6 - 27y^6$
37. $64x^6y^3 - 27z^3$ $(4x^2y-3z)(16x^4y^2+12x^2yz+9z^2)$
38. $x^9 - y^3z^3$
39. $125x^9 + 729y^6$ $(5x^3+9y^2)(25x^6-45x^3y^2+81y^4)$
40. $1331s^{12} - 1728t^6$