Factoring: *Sum and Difference of Two Cubes* $x^3 \pm a^3$

Factor the binomials completely.

1. $x^3 - 343$
2. $8a^3 + 27b^3$
3. $y^3 + 64$
4. $x^3 - 8$
5. $a^3 + b^3$
6. $y^3 - z^6$
7. $m^3 + 125$
8. $x^3 - 1$
9. $y^3 - 216$
10. $64m^3 + 125n^3$
11. $24x^3 - 3y^3$
12. $2x^3 + 54$

ANSWERS:

1. $(x-7)(x^2+7x+49)$
2. $(2a+3b)(4a^2-6ab+9b^2)$
3. $(y+4)(y^2-4y+16)$
4. $(x-2)(x^2+2x+4)$
5. $(a+b)(a^2-ab+b^2)$
6. $(y-z^2)(y^2+yz^2+z^4)$
7. $(m+5)(m^2-5m+25)$
8. $(x-1)(x^2+x+1)$
9. $(y-6)(y^2+6y+36)$
10. $(4m+5n)(16m^2-20mn+25n^2)$
11. $3(2x-y)(4x^2+2xy+y^2)$
12. $2(x+3)(x^2-3x+9)$