Difference of Two Squares 'Hammering In'

Remember to pull out numbers and letters before you go to two brackets. Factorise the following:

1. $x^2 - 9$. $\boxed{(x+3)(x-3)}$

2. $4z^2 - 25$. $\boxed{(2z+5)(2z-5)}$

3. $4\theta^2 - 16$. $\boxed{4(\theta-2)(\theta+2)}$

4. $25u^2 - t^2$. $\boxed{(5u-t)(5u+t)}$

5. $36r^2 - 16q^2$. $\boxed{4(3r-2q)(3r+2q)}$

6. $4 - 81t^2$. $\boxed{(2+9t)(2-9t)}$

7. $(2x+1)^2 - (x+1)^2$. $\boxed{x(3x+2)}$

8. $(3x-1)^2 - 4x^2$. $\boxed{(5x-1)(x-1)}$

9. $x^4 - 1$. $\boxed{(x+1)(x-1)(x^2+1)}$

10. $x^8 - y^8$. $\boxed{(x^4+y^4)(x^2+y^2)(x-y)(x+y)}$

11. $\theta^{16} - \rho^8$. $\boxed{(\theta^8+\rho^4)(\theta^4+\rho^2)(\theta^2+\rho)(\theta^2-\rho)}$

12. $2.4^2 - 1.4^2$. $\boxed{(2.4+1.4)(2.4-1.4) = 3.8}$

Harder Factorisation

Factorise:

1. $px + py + qx + qy$. $\boxed{(p+q)(x+y)}$

2. $4px + 8py - 2qx - 4qy$. $\boxed{2(2p-q)(x+2y)}$

3. $2a^2x + 2abx - a^2y - aby$. $\boxed{a(a+b)(2x-y)}$