1) Expand $(x+a)(x+b)$ to show why simple trinomial factor works

$(x+a)(x+b)$

$= x^2 + ax + bx + ab$

$= x^2 + (a+b)x + ab$

$a \times b = ab$

$a + b = a + b$

$= (x+a)(x+b)$

2) Factor:

$x^3 + 5x^2 + 6x$

$= x(x^2 + 5x + 6)$ GCF

$3 + 2 = 5$

$3 \times 2 = 6$

$= x(x+3)(x+2)$

3) Show $x^2 - 4 = (x-2)(x+2)$ using simple trinomial factoring

$x^2 - 4 = x^2 + 0x - 4$

$2 + -2 = 0$

$2 \times -2 = -4$

$= (x+2)(x-2)$