

Expanding Quadratics


$$(x + 2)(x + 4)$$

The diagram shows the expansion of the quadratic expression $(x + 2)(x + 4)$. Four rockets are used to illustrate the multiplication process. Two rockets connect the x in the first bracket to the x in the second bracket. Two rockets connect the x in the first bracket to the 4 in the second bracket. Two rockets connect the 2 in the first bracket to the x in the second bracket. Two rockets connect the 2 in the first bracket to the 4 in the second bracket.

Four rockets so four multiplications

$$x^2 + 4x + 2x + 8$$

This can be simplified by adding the things that are the same:

$$x^2 + 6x + 8$$