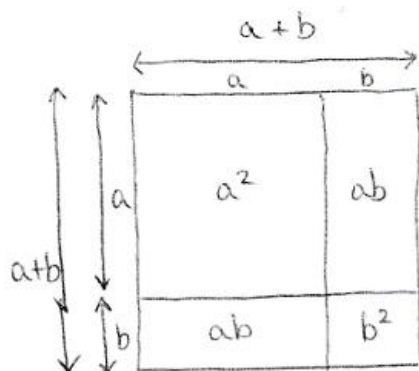


$$(a+b)^2 = a^2 + 2ab + b^2$$

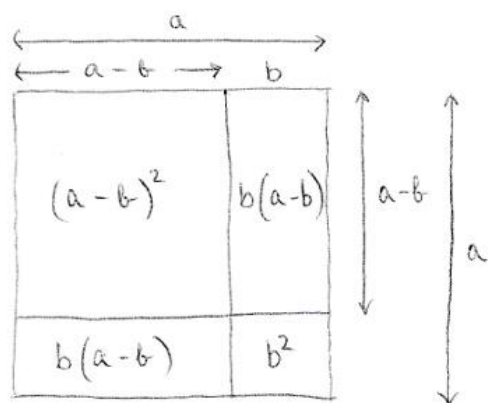


$$T(a+b) = (a+b)(a+b) = (a+b)^2$$

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

$$\Rightarrow (a+b)^2 = a^2 + 2ab + b^2$$

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



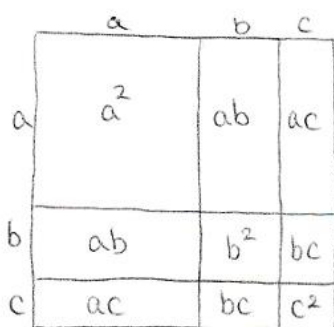
$$T_a = a \cdot a = a^2$$

$$T_a = (a-b)^2 + 2 \cdot b(a-b) + b^2$$

$$\Rightarrow a^2 = (a-b)^2 + 2ab - 2b^2 + b^2$$

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

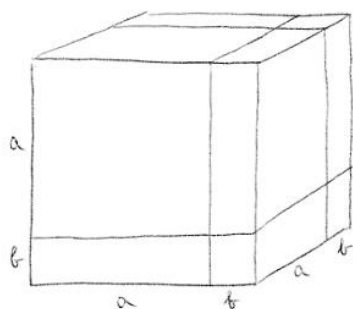
$$(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc$$



$$T(a+b+c) = (a+b+c)^2$$

$$T(a+b+c) = a^2 + 2ab + 2ac + 2bc + b^2 + c^2$$

$$(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc$$



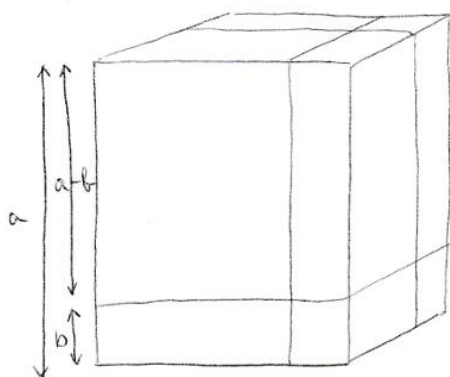
$$(a+b)^3 = ?$$

$$a^3 + aab + bba + aba + b^3 + bba + aab + bba$$

$$a^3 + \underline{a^2b} + \underline{ab^2} + \underline{a^2b} + b^3 + \underline{ab^2} + \underline{a^2b} + \underline{ab^2}$$

$$a^3 + 3a^2b + 3ab^2 + b^3$$

$$(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$



$$(a-b)^3 = ?$$

$$(a-b)^3 + b(a-b)^2 + b^2(a-b) + b(a-b)^2 + b^3 + b^2(a-b) + b^2(a-b) + b(a-b)^2$$

$$a^3 = (a-b)^3 + 3b(a-b)^2 + 3b^2(a-b) + b^3 = (a-b)^3 + \underline{3a^2b} - 6ab^2 + 3b^3 + 3ab^2 - 3b^3 + b^3$$

$$(a-b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$$