$3a^2b \times 4ab^3$

numbers: $3 \times 4 = 12$

a: $a^2 \times a = a^3$

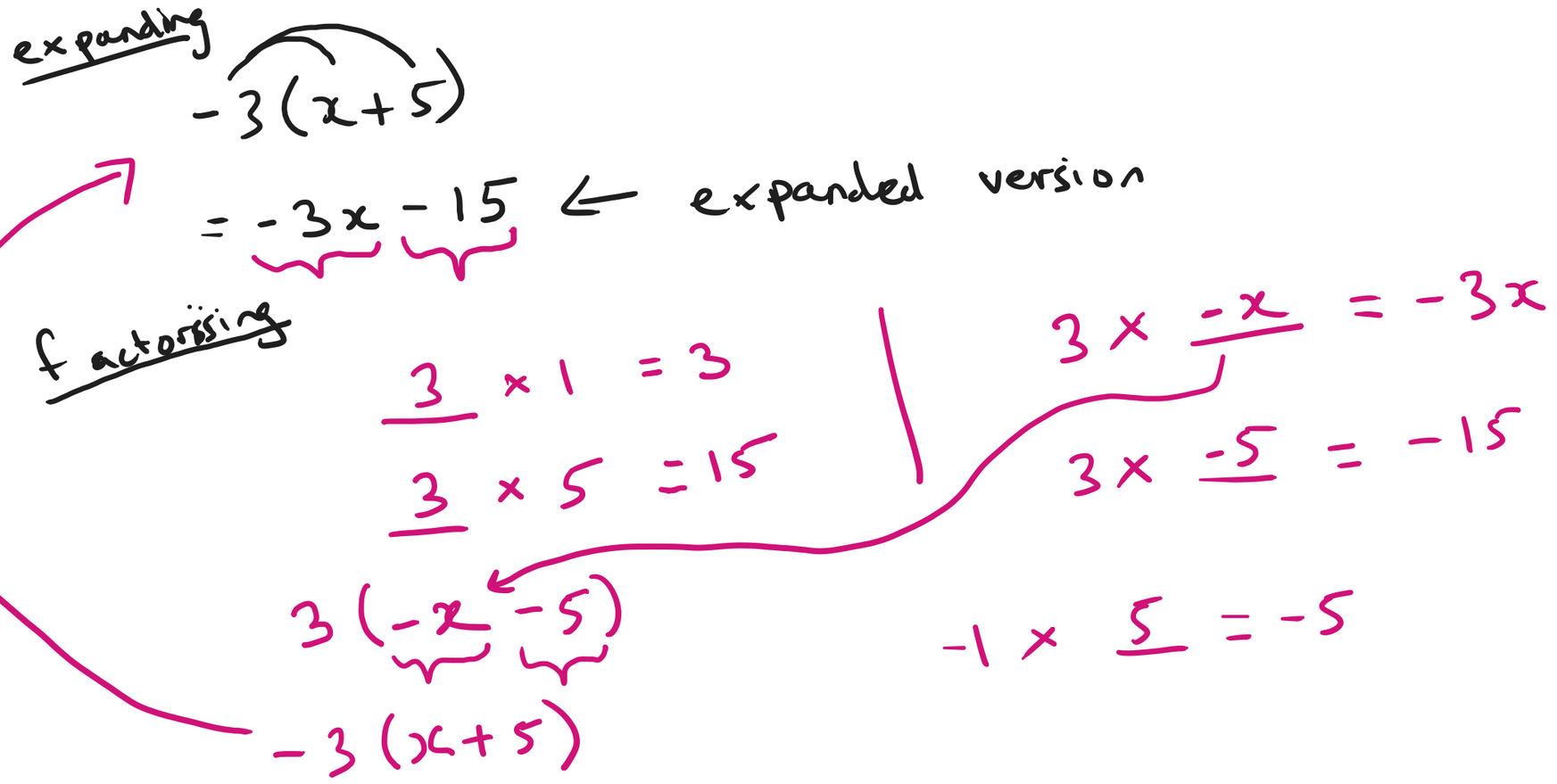
b: $b \times b^3 = b^4$

$= 12a^3b^4$

Factorising is the opposite of expanding.

If we were given -3(x+5), we could expand this, and then afterwards

we may want to factorise it back to its original form.



Factorise

$-3x - 12$

$= -3(x + 4)$

$-3 \times x = -3x$

$-3 \times 4 = -12$

$7a + 7b$

$7(a+b)$ ✓

$7 \times a = 7a$

$7 \times b = 7b$

$\frac{(2^2a^3)^2}{3a^2} = \frac{(4a^3)^2}{3a^2} = \frac{4^2(a^3)^2}{3a^2} = \frac{16a^{3\times2}}{3a^2}$

$= \frac{16a^6}{3a^2} = \frac{16}{3}a^4$