Like terms: products whose variables are raised to the same power

different powers

eg $3x$ and $2x$ — non-eg $3x$ and $3x^2$

eg 7 and 2 — non-eg x and y

eg $-3xy^2$ and $\frac{1}{2}xy^2$ — non-eg xy^2 and x^2y

eg Find all groups of like terms

keep sign keep sign

$3x - 4y + x + 2 - \frac{1}{2}y + xy - 4$

Combining like terms: Because of distribution, we can group like terms via addition / subtraction

eg Group like terms:

$3x - 4y + x + 2 - \frac{1}{2}y + xy - 4$

$= 4x - \frac{9}{2}y - 2 + xy$

common mistake:

$+2 - \frac{1}{2}y + xy - 4$

$= 6 - \frac{1}{2}y + xy$

Distribution:

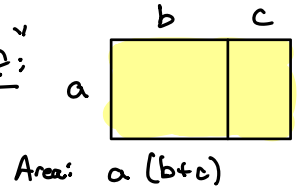
$a(b+c) = ab + ac$

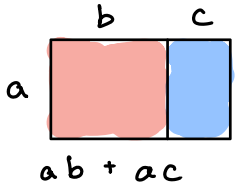
eg 70×12

$= 70 \times (10+2)$

$= 700 + 140 = 840$

"Pf:"





eg $3(x+4) = (3)(x)+(3)(4) = 3x+12$

eg $4(2x-3) = (4)(2x)+(4)(-3) = 8x-12$

eg $-2(x-4) = (-2)(x)+(-2)(-4) = -2x+8$

common mistake:

$-2(x-4) = -2-8$

eg $3(x-2)-4(2x-3)$

$= 3x-6-8x+12$

$= -5x+6$

$3x+(-6)+(-8x)+12$

eg $(2-x^2+x^3)+(3x^2-x+2x^3)-(2x+x^3-x^4)$

$= 2-x^2+x^3+3x^2-x+2x^3-2x-x^3+x^4$

$= 2+2x^2+2x^3-3x+x^4$