Collecting Like Terms

In algebra, letters are used to represent numbers. Each one is called a "term", so collecting like terms involves collecting the letters that are the same.

e.g. $2a + 3b + a$

Here we can collect together $2a$ and a, making $3a + 3b$

However, if we have $2a + 3b + c$, we can't change this because all the letters are different.

We have to be careful, though! Always look at the sign in front of the "term". If we have $2a + 3b - a$, we collect together $2a$ and $-a$, leaving $1a + 3b$ (or $a + 3b$).

It's your turn!

Simplify:

1) $3a + 2b + 2a$
   a's = $3a + 2a = 5a$ b's = $2b$ put them together: $5a + 2b$
2) $4c + d - 2c$
   $= (4c - 2c) + d = 2c + d$
3) $7a + 2b + 3c - 4a$
   $= (7a - 4a) + 2b + 3c = 3a + 2b + 3c$
4) $2x + 4y + x - 2y$
   $= (2x + x) + (4y - 2y) = 3x + 2y$
5) $6a - 4b - 2a + 5b + a$
   $= (6a - 2a + a) - 4b + 5b = 5a + b$ (be careful with your minuses!)
6) $5x + 2x - y + 3x + z$
   $= (5x + 2x + 3x) - y + z = 10x - y + z$

Handy ★ Reminder: Don't forget to keep the sign in front of the term! Also, remember that x is the same as 1x.

Go Pro!

Simplify: $7x + 3y - 4x + 2z - 2y + 3x - x + 4y - 5z$

x's = $7x - 4x + 3x - x$ y's = $3y - 2y + 4y$ z's = $2z - 5z$

$=$ $5x$ $+5y$ $-3z$ $= 5x + 5y - 3z$