Simultaneous Equations

Steps to solve Simultaneous Equations 1) 'Cross multiply' co-efficients of y if they are not the same 2) Add/ Subtract equations to attain an equation with one unknown. 3) Solve for x. 4) Substitute the value of x into any one of the original equations and then solve for y.		**Keywords for translating into algebraic expressions**	**Operation Or symbol**
		More, sum, and, add, total	+
		Difference, less	−
		Twice, triple, product	×
		Divide, shared among,	÷
Sign	**Add/ Subtract Equations**	is, result	=
Same $\begin{pmatrix}-\\-\end{pmatrix}$ or $\begin{pmatrix}+\\+\end{pmatrix}$	SUBTRACT$(-)$		
Different $\begin{pmatrix}-\\+\end{pmatrix}$ or $\begin{pmatrix}+\\-\end{pmatrix}$	ADD $(+)$		

Solve the following pairs of simultaneous equations

1) $3a - 2b = 12$
   $2a + b = 1$

2) $3x - 2y = 19$
   $2x + 3y = 4$

3) $2x + y = 7$
   $x - 2y = 1$

4) $3x - 2y = 10$
   $2x + 5y = 13$

5) One packet of biscuit cost $\$x$ and one cup of ice cream costs $\$y$.

One packet of biscuits and two cups of ice cream cost \$8.00, while three packets of biscuits and one cup of ice cream cost \$9.00.

i) Write a pair of simultaneous equations in x and y to represent the given information above.

ii) Solve the equations obtained in (i) above to find the cost of one packet of biscuits and the cost of one cup of ice cream.

6) A candy store packages lollipops and toffees in bags for sale where a lollipop weighs x grams and a toffee weighs y grams.

5 lollipops and 12 toffees have a mass of 61 grams

10 lollipops and 13 toffees have a mass of 89 grams

(i) If the mass of one lollipop is x grams and the mass of one toffee is y grams, write two equations in x and y to represent the above information.

(ii) Calculate the mass of

a) ONE lollipop

b) ONE toffee