**Rearranging Formulae GREEN**

1) Make $x$ the subject:

a) $x+b=c$ b) $x-c=f$

c) $2x+4=f$ d) $ax+b=c$

2) Make $x$ the subject:

a) $\frac{x + 3}{2}=a$ b) $\frac{x}{2}+3=b$

c) $2(x+a)=b$ d) $\frac{x - b}{2}=a$

3) Make $x$ the subject:

a) $ax+bx=c$ b) $ax-bx=d$

c) $ax=x+d$ d) $ax+b=cx+d$

4) Make $x$ the subject:

a) $x²+4=a$ b) $x^{2}-d=c$

c) $(x+2)²=b$ d) $\sqrt{x+a}=b$

5) Make $x$ the subject:

a) $\frac{a + 3}{x}=b$ b) $\frac{a}{x}+b=c$

6) Make $x$ the subject:

a) $\frac{x + 3}{x}=b$ b) $\frac{x + 3}{x + c}=b$

**Rearranging Formulae AMBER**

1) Make $x$ the subject (only one or two steps):

a) $x+b=c$ b) $x-c=f$

c) $2x+4=f$ d) $ax+b=c$

2) Make $x$ the subject (slightly harder):

a) $\frac{x + 3}{2}=a$ b) $\frac{x}{2}+3=b$

c) $2(x+a)=b$ d) $\frac{x - b}{2}=a$

3) Make $x$ the subject – $x$ occurs twice: (Once all the $x$s are on one side you must factorise out $x$)

a) $ax+bx=c$ b) $ax-bx=d$

c) $ax=x+d$ d) $ax+b=cx+d$

4) Make $x$ the subject – isolate the square or square root first:

a) $x²+4=a$ b) $x^{2}-d=c$

c) $(x+2)²=b$ d) $\sqrt{x+a}=b$

5) Make $x$ the subject – multiply both sides by the denominator of the fraction:

a) $\frac{a + 3}{x}=b$ b) $\frac{a}{x}+b=c$

6) As hard as they come… fractions where $x$ occurs twice – these will involve factorising.

a) $\frac{x + 3}{x}=b$ b) $\frac{x + 3}{x + c}=b$

**Rearranging Formulae RED**

1) Make $x$ the subject (only one or two steps):

Remember:

Keep equals sign in line;

Use inverse operations;

and

Keep the equation balanced.

a) $x+b=c$ b) $x-c=f$

c) $2x+4=f$ d) $ax+b=c$

2) Make $x$ the subject (slightly harder):

Pay careful attention to the order the operations occurred in.

a) $\frac{x + 3}{2}=a$ b) $\frac{x}{2}+3=b$

c) $2(x+a)=b$ d) $\frac{x - b}{2}=a$

3) Make $x$ the subject – $x$ occurs twice: (Once all the $x$s are on one side you must factorise out $x$)

a) $ax+bx=c$ b) $ax-bx=d$ $x\left(a+b\right)=c$

c) $ax=x+d$ d) $ax+b=cx+d$

4) Make $x$ the subject – isolate the square or square root first:

a) $x²+4=a$ b) $x^{2}-d=c$

 $-4$ $-4$

c) $(x+2)²=b$ d) $\sqrt{x+a}=b$

5) Make $x$ the subject – multiply both sides by the denominator (bottom) of the fraction:

a) $\frac{a + 3}{x}=b$ b) $\frac{a}{x}+b=c$

 $×x$ $×x$ $-b$ $-b$

6) As hard as they come… fractions where $x$ occurs twice – these will involve factorising.

a) $\frac{x + 3}{x}=b$ b) $\frac{x + 3}{x + c}=b$ $×x$ $×x$ $×(x+c)$ $×(x+c)$