Jamie has 80 beads in blue and green in a ratio 5 : 3

They are then given additional beads.

They are given the same number of both colours and now have a ratio 13 : 9

How many beads were they given?

$B : G$	Total	
5 : 3	8	$\times 10$
50 : 30	80	

Before		**After**		
$B : G$	Diff	$B : G$	Diff	
50 : 30	20	13 : 9	4	$\times 5$
			20	

Jamie has blue to green beads in a ratio 5 : 2

They exchange some blue beads for the same number of green beads.

The ratio of beads is now 4 : 5

What is the smallest number of beads they could have started with?

How many beads did they exchange?

Before		**After**	
$B : G$	Total	$B : G$	Total
5 : 2	7	4 : 5	9

Jamie has 90 beads in blue and green in the ratio 3 : 7

They gave away the same number of each bead.

Now they have beads in the ratio 1 : 7

How many beads do they have at the end?

$B : G$	Total
3 : 7	
:	90

Before		After	
$B : G$	Diff	$B : G$	Diff
		1 : 7	6

Jamie and Tyler have beads in a ratio of 4 : 5

Jamie gives some of their beads to Tyler.

The ratio is now 3 : 7

Find the smallest number of beads they could have started with

and how many beads Jamie gives to Tyler.

The following ratios are equivalent

$x-1:x+1$ and $x+3:x+7$

Find x

	Diff	
$x-1:x+1$	2	
		$\times 2$
$x+3:x+7$	4	

$$2(x-1)=x+3$$

The following ratios are equivalent

$14-x:4+x$ and $20-3x:1+3x$
Find x

	Total	
$14-x:4+x$	18	
$20-3x:1+3x$	21	

The following ratios are equivalent

$14 + x : 19 + x$ and $24 + 3x : 30 + 3x$

Find x

Jamie has 80 beads in blue and green in a ratio 5 : 3

They are then given additional beads.

They are given the same number of both colours and now have a ratio 13 : 9

How many beads were they given?

$B : G$	Total	
5 : 3	8	× 10
50 : 30	80	

Before		**After**		
$B : G$	Diff	$B : G$	Diff	
50 : 30	20	13 : 9	4	
		65 : 45	20	× 5

15 of each colour

Jamie has blue to green beads in a ratio 5 : 2

They exchange some blue beads for the same number of green beads.

The ratio of beads is now 4 : 5

What is the smallest number of beads they could have started with?

How many beads did they exchange?

LCM of total

	Before		**After**		
	$B : G$	Total	$B : G$	Total	
×9	5 : 2	7	4 : 5	9	× 7
	45 : 18	63	28 : 35	63	

Exchanged 27 beads

Jamie has 90 beads in blue and green in the ratio 3 : 7

They gave away the same number of each bead.

Now they have beads in the ratio 1 : 7

How many beads do they have at the end?

$B : G$	Total
3 : 7	10
27 : 63	90) ×9

Before		**After**	
$B : G$	Diff	$B : G$	Diff
27 : 63	36	1 : 7	6
		6 : 42	36) ×6

48 beads at the end.

Jamie and Tyler have beads in a ratio of 4 : 5

Jamie gives some of their beads to Tyler.

The ratio is now 3 : 7

Find the smallest number of beads they could have started with

and how many beads Jamie gives to Tyler.

Before			After		
	B : G	T		B : G	T
	4 : 5	9		3 : 7	10
×10 (	40 : 50	90		27 : 63	90) ×9

90 beads

13 beads given to Tyler

The following ratios are equivalent

$x-1:x+1$ and $x+3:x+7$

Find x

	Diff	
$x-1:x+1$	2	
		$\times 2$
$x+3:x+7$	4	

$2(x-1)=x+3$

$2x-2=x+3$

$x=5$

The following ratios are equivalent

$14-x:4+x$ and $20-3x:1+3x$

Find x

	Total	
$14-x:4+x$	18	
		$\times \frac{21}{18}=\frac{7}{6}$
$20-3x:1+3x$	21	

$\frac{7}{6}(4+x)=1+3x$

$7(4+x)=6(1+3x)$

$28+7x=6+18x$

$22=11x$

$x=2$

The following ratios are equivalent

$14 + x : 19 + x$ and $24 + 3x : 30 + 3x$

Find x

$14+x : 19+x$ Diff 5

$24+3x : 30+3x$ 6 $\times \frac{6}{5}$

$\frac{6}{5}(14+x) = 24+3x$

$6(14+x) = 5(24+3x)$

$84 + 6x = 120 + 15x$

$-36 = 9x$

$x = -4$