The ratio of girls to boys at a party was 27:31. After 9 boys arrived, the ratio of girls to boys at the party was 27:32. Find the number of boys at the start.

girls : boys

27□ : 31□

+ 9

27□ : 32□

□ = 9

31 × 9 = 279

The ratio of girls to boys at a party was 13:10. After 3 girls left and 3 boys arrived, the ratio of girls to boys at the party was 38:31. Find the number of girls at the start.

What is staying the same? girls, boys, or total

start: 13 : 10 (×3) | 13Δ : 10Δ | total: 23Δ

end: 38 : 31 | 38✚ : 31✚ | total: 69✚

} should be equal

Δ = 3✚

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start: 39□ : 30□

end: 38□ : 31□

} difference: □

□ = 3

Start with 39□ = 39 × 3 = 117

The ratio of girls to boys at a party was 3:4. After 12 girls arrived, the ratio of girls to boys became 3:2. How many children are there in total at the end?

① Identify what is not changing: boys

3:4 ↓ 3:2 becomes 3:4 → 6:4

} 3□ = 12

□ = 4

Total: 10□ = 10 × 4 = 40

The ratio of girls to boys at a party was 3:4. After 510 girls arrive and 510 boys leave, the ratio becomes 5:1. How many girls at the end?

The total # of children is staying the same

Start:	3:4	total: 7	×6	18:24	18□ : 24□
End:	5:1	total: 6	×7	35:7	35□ : 7□

+17□ ↘ ↙ -17□

$\Rightarrow$ $17\square = 510$

$\square = 30$

$35\square = 1050$