Changing ratios and problem solving recording sheet name:

1. At 1:00 there were twice as many dogs as cats in the waiting room at the vet’s office. At 1:15, Mrs Goodie and her two dogs come in, and Mr. Jones brings in his two cats. The vet who was going to see the cats is still at lunch, but in the next half hour the vet who is in is able to see all but 3 of the dogs. When those dogs leave, there are now 8 animal (all cats or dogs) in the clinic.

|  |  |  |  |
| --- | --- | --- | --- |
| time | number of dogs | number of cats | ratio of number of dogs to number of cats (simplified form) |
| 1:00 |  |  |  |
| 1:15 |  |  |  |
| 1:45 |  |  |  |

2. I have lots of trees in my yard, and when spring first comes, before I have a chance to plant, the ratio of number of trees to number of flowering plants in my garden is 1:1 (there are the same number of trees as number of flowers). Last year I planted 10 flowers in May, and another 14 in June. At that point, I ended up with four times as many flowers as trees, for a grand total of 40 plants (flowers and trees combined).

|  |  |  |  |
| --- | --- | --- | --- |
| month | number of trees | number of flowers | ratio of number of trees to number of flowers (simplified form) |
| April |  |  |  |
| May |  |  |  |
| June |  |  |  |

3. On Monday, Cindy made some bunnies and dinosaurs for the craft fair on Saturday. She made 1/4 as many bunnies as dinosaurs. On Wednesday, after those were finished, she decided that there weren’t enough items, so she made some more, so that by the end of the day Friday, she had twice as many bunnies and dinosaurs as she had before. At the craft show she sold 3/4 of the dinosaurs, and all but one of the bunnies, which left 9 items to take home.

|  |  |  |  |
| --- | --- | --- | --- |
| day | number of bunnies | number of dinosaurs | ratio of number of bunnies to number of dinosaurs (simplified) |
| Wed (morning) |  |  |  |
| Friday |  |  |  |
| Saturday (after fair) |  |  |  |

4. Dan and Carol held a joint graduation party. their guest list had 3/4 as many men as women (they included themselves on the list). Everyone said they would come except Mike and Susan (who had other parties they had committed to going to). When the day of the party arrived only 3/4 of the men, and 3/4 of the women on the original guest list were able to come (the flu was going around that week). All told, the party was a success, however, and the 21 people (including Dan and Carol) declared the size to be just perfect.

|  |  |  |  |
| --- | --- | --- | --- |
|  | number of men | number of women | ratio of number of men to number of women |
| people invited |  |  |  |
| people who said they would come |  |  |  |
| people who came |  |  |  |

**5. Look back**: When does the ratio change?

Does the ratio change when I add to just one group?

Does the ratio change when I add equally to both groups?

Does the ratio change when I double each group?

Does the ratio change when I multiply the number of elements in each group by the same number?

Can you solve this similar problem?

6. Yesterday the ratio of pens to pencils in my drawer was 3:2. I cleaned up and fond 2 more pencils and 2 more pens to put in the drawer. I now have 8 pencils in the drawer. How many pens do I have?