

$$\text{average} = \frac{\text{total}}{\text{number}} \quad \text{total} = \text{average} \times \text{number}$$

1.  $\frac{75 + 81 + 48 + 61 + 55}{5} = \frac{320}{5} = \boxed{64}$

2. Let's find how many coins each student has. Robin has 129. Robin and Cari have 168 altogether, so Cari has  $168 - 129 = 39$ . Robin and Ralph have 246 altogether, so Ralph has  $246 - 129 = 117$ .

Now average these three numbers:  $\frac{129 + 39 + 117}{3} = \frac{285}{3} = \boxed{95}$

3. Let's use the second formula on the top of the page. The total of the frogs in the first five ponds is  $\text{total} = \text{average} \times \text{number} = 17 \times 5 = 85$ . The total of the frogs in the other 4 ponds is  $\text{total} = \text{average} \times \text{number} = 24 \times 4 = 96$ . So there are 85 frogs in the first five ponds, and 96 frogs in the last four ponds. So altogether in all nine ponds, there are  $85 + 96 = \boxed{181}$

4. Let's find the total score of all 10 students using the second formula:

$\text{total} = \text{average} \times \text{number} = 87 \times 10 = 870$ . The total score of all 10 students is 870, and the total score of 4 of those students is 306. Thus, the other 6 students got a total score of  $870 - 306 = 564$ .

The average of those 6 students is  $\text{average} = \frac{\text{total}}{\text{number}} = \frac{564}{6} = \boxed{94}$

5. 1. find the total weight of all 14 cheese wheels.  $\text{total} = \text{average} \times \text{number} = 4.6 \times 14 = 64.4$ .  
2. find the total weight of the 9 cheese wheels with average 5.1.  $\text{total} = \text{average} \times \text{number} = 5.1 \times 9 = 45.9$ .

3. find the total weight of the last 5 cheese wheels:  $64.4 - 45.9 = \boxed{18.5}$

6. 1. find the total height of all 8 people.  $\text{total} = \text{average} \times \text{number} = 5.2 \times 8 = 41.6$  feet

2. find the total height of the first 4 people with average height 4.7.  $\text{total} = \text{average} \times \text{number} = 4.7 \times 4 = 18.8$  feet

3. find the total height of the last 4 people.  $41.6 - 18.8 = \boxed{22.8}$

7. 1. find the total number of books of all 37 students.  $\text{total} = \text{average} \times \text{number} = 14 \times 37 = 518$

2. find the total number of books of the first 21 students with average 18.  $\text{total} = \text{average} \times \text{number} = 18 \times 21 = 378$

3. find the total of the last .  $518 - 378 = \boxed{140}$

8.  $\text{average profit} = \frac{\text{all the profit}}{\text{number of flowers}}$

Yvonne spent \$20 per bouquet, and she bought 20 bouquets, so she spent  $\$20 \times 20 = \$400$  on the flowers.

She bought 20 bouquets with 25 flowers in each bouquet, so she bought  $20 \times 25 = 500$  flowers. She sold  $\frac{3}{4}$  of them (which is  $\frac{3}{4} \times 500 = 375$  of them) at \$3.00 apiece, so she made  $375 \times \$3.00 = \$1,125$  on those flowers. She sold the rest (which is  $500 - 375 = 125$  of

them) at \$2.00 apiece, so she made  $125 \times \$2.00 = \$250$  on them. So she made a total of  $1,125 + 250 = \$1,375$  from the flowers.

Now her TOTAL PROFIT is how much she made – how much she spent, so  $\$1,375 - \$400 = \$975$ .

Now we'll find her average:  $average = \frac{profit}{flowers} = \frac{\$975}{500} = \boxed{\$1.95}$

9. Since the average of A, B, and C is \$24, the sum of money in all three boxes is  $\$24 \times 3 = \$72$ . Since A and B have an average of \$19, the sum of money in the two boxes is  $\$19 \times 2 = \$38$ . Since B and C contain an average of \$28, the sum of money in the two boxes is  $\$28 \times 2 = \$56$ .

To summarize what we found above,

$$A + B + C = \$72$$

$$A + B = \$38$$

$$B + C = \$56$$

What would it mean if we added  $\$38 + \$56$ ? That would mean  $A + B + B + C = \$38 + \$56 = \$94$ . Look at this equation and the first equation above. One is  $A + B + C$ , the other is  $A + B + B + C$ . Their only difference is  $B$  is added twice. Therefore, the difference in amounts of  $A + B + C$  and  $A + B + B + C$  is the amount contained in  $B$ . So  $B = \$94 - \$72 = \$22$ . Now we can find out what  $A$  and  $C$  are. Since  $A + B = \$38$  and  $B = \$22$ ,  $A = \$16$ , and since  $B + C = \$56$ ,  $C = \$34$ .

Finally, we can find the average of  $A$  and  $C$ .  $average = \frac{\$16 + \$34}{2} = \frac{\$50}{2} = \boxed{\$25}$ .

10. 1. find the total number of lemons fruit stands L, M, and N have.  $total = average \times number = 53 \times 3 = 159$
2. find the total number of lemons the other 5 fruit stands have.  $total = average \times number = 64 \times 5 = 320$
3. find the number of lemons stand L has. Since the total of L, M, and N is 159, and M and N have a total of 119, L has  $159 - 119 = 40$
4. find the total number of lemons L + the other five stands have:  $40 + 320 = 360$ .
5. find the average number of lemons these 6 stands have:  $average = \frac{360}{6} = \boxed{60}$