

1.

$$\text{Average} = \frac{22 + 23 + 24 + 25 + 26 + 27 + 28 + 29}{8}$$

$$\text{Average} = \frac{204}{8}$$

$$\text{Average} = \boxed{25.5}$$

Notice also that $25.5 = \frac{25 + 26}{2}$.

2. $\boxed{11.5}$

3.

$$\text{Average} = \frac{\text{Sum of the First 25 Odd Numbers}}{25}$$

$$\text{Average} = \frac{1 + 3 + 5 + \cdots + 45 + 47 + 49}{25}$$

$$\text{Average} = \frac{625}{25}$$

$$\text{Average} = \boxed{25}$$

Knowledge of sums of patterns from the previous week's topic applies here to find the sum of the first 25 odd numbers. We can also notice that it is 625, or 25^2 . In general, the sum of the first n odd numbers is equal to n^2 .

4. $\boxed{5}$

5. $\boxed{93}$

6. $\boxed{16}$

7. $\boxed{30 \text{ pounds}}$

8. $\boxed{16}$

9. $\boxed{98}$



Math Olympiad and Problem Solving Program

F110 - Introductory Problem Solving

Problem Set 17.1 - Average

Name:

Date:

10. If we add up the total number of trees each student planted, and divide that by the number of students we have, we get our average which must be a one-digit integer. So far we have $2 \times 2 + 3 \times 3 + 4 \times 4 = 29$ trees from the first 9 students. Overall we have 10 students so the number of trees planted MUST be divisible by 10 in order to be an integer. This means that the last student could have planted 1, 11, 21, 31, . . . numbers of trees. But we also know that the last student planted less than ten trees so he must have planted only $\boxed{1}$.