```
# Check if the p-value is less than the significance level (0.05)
if (p_value < 0.05) {
  print("We can consider that the mean serum protein level of those who were fed on high protein diet is different from that of the general population.")
} else {
  print("We cannot consider that the mean serum protein level of those who were fed on high protein diet is different from that of the general population.")
}
```

The t.test function takes two arguments: the numeric vector protein_levels representing the serum protein levels of the children who received the high protein diet, and mu = 7.0 representing the population mean of 7.0 g/100ml.
The result object contains various test statistics, such as the estimated mean difference, the standard error of the mean difference, and the t-value. If the p-value is less than the significance level (0.05), you can reject the null hypothesis that the mean serum protein level of the children who received a high protein diet is equal to the normal level of 7.0 g/100ml in the general population, and conclude that the mean serum protein level is significantly different.

9) Students were selected to training. Their performance was noted by giving a test and the marks recorded
out of 50. They were given effective 6 months training and again they were given a test and marks were
recorded out of 50.
Students 1 2 3 4 5 6 7 8 9 10
Before training 25 20 35 15 42 28 26 44 35 48
After training 26 20 34 13 43 40 29 41 36 46
By applying the t-test can it be concluded that the students have benefited by the training?

To determine if the students have benefited from the training, you can perform a paired sample t-test. This test compares the mean difference in the test scores before and after the training, to determine if there is a significant improvement.

Here's how you can perform the paired sample t-test in R:

```
# Define the test scores before and after the training
before_training <- c(25, 20, 35, 15, 42, 28, 26, 44, 35, 48)
after_training <- c(26, 20, 34, 13, 43, 40, 29, 41, 36, 46)

# Perform the paired sample t-test using the t.test function
result <- t.test(after_training - before_training, mu = 0, alternative = "greater")

# Extract the p-value from the result
p_value <- result$p.value

# Check if the p-value is less than the significance level (0.05)
if (p_value < 0.05) {
  print("We can conclude that the students have benefited by the training.")
} else {
  print("We cannot conclude that the students have benefited by the training.")
}
```

The t.test function takes two arguments: the numeric vector after_training - before_training representing the difference in the test scores, and mu = 0 representing the expected mean difference of 0 if there is no improvement. The argument alternative = "greater" indicates that we are testing the alternative hypothesis that the mean difference is greater than 0, implying that the students have benefited from the training.
The result object contains various test statistics, such as the estimated mean difference, the standard error of the mean difference, and the t-value. If the p-value is less than the significance level (0.05),