1. Create a subset for Ivies and another for Non-Ivies. Write down the number of Ivy students and the number of Non-Ivy students.

**Ivy:** 54  **Non-Ivy:** 90

```{r}

ivies <- subset(fencing\_df, Ivy == "Ivy")

ivies

non\_ivies <- subset(fencing\_df, Ivy == "Non-Ivy")

non\_ivies

```

1. Find the mean *Victories* for Ivies and Non-Ivies and write them down below.

**Ivy:** 12.54 **Non-Ivy:** 10.88

```{r}

mean(ivies$Victories)

mean(non\_ivies$Victories)

```

1. Find the standard deviation of *Victories* for Ivies and Non-Ivies and write them down below.

**Ivy:** 3.74 **Non-Ivy:** 3.71

```{r}

sd(ivies$Victories)

sd(non\_ivies$Victories)

```

1. Create a side-by-side boxplot of *Victories* for Ivies and Non-Ivies, compare the distributions.

```{r}

boxplot(Victories ~ Ivy, data = fencing\_df)

```

The Non-Ivy plot looks to have a bigger distribution than the Ivy one but the median number of victories is lower than for Ivy.

A diagram of a graph

Description automatically generated

1. Test for a discernible difference in the mean number of *Victories* for Ivy league fencers and Non-Ivy league fencers.

**H0:**

**Ha:**

```{r}

t.test(Victories ~ Ivy, data = fencing\_df)

```

**t\_value:** 2.59

**p\_value:** 0.011

**Conclusion:** Reject H0; 0.011 < 0.05

**Interpretation:** We have significant evidence that the mean number of victories for ivy league fencers is higher than the mean number of victories for non-ivy league fencers.