

Q4:

Question 4

a
$$\begin{aligned}
 \text{Fourth spread} &= f_s \\
 \text{(Interquartile range)} &= \text{upper fourth} - \text{lower fourth} \\
 &= 392 - 359 \\
 &= \underline{\underline{33}}
 \end{aligned}$$

c Comment

↳ The left edge of the box is much closer to the median than is the right edge, indicating a very substantial skew in the middle half of the data. The box with width (33) is a reasonably large relative the range of the data.

• Plot is negatively skewed.

d
$$\begin{aligned}
 &424 - 392 \\
 &= 32 \text{ units of decreasing } 424 \text{ without affecting the} \\
 &\text{the value of the fourth spread.}
 \end{aligned}$$

Code:

```
# Question 4
```

```
# a
```

```
val = c(325, 325, 334, 339, 356, 356, 359, 359,
        363, 364, 364, 366, 369, 370, 373, 373,
        374, 375, 389, 392, 393, 394, 397, 402,
        403, 424)
```

```
#interQUatile range
```

```
valIQR = IQR(val, type = 5)
```

```
valIQR
```

```
valStem = stem(val)
```

```
valSumm = fivenum(val)
```

```
valSumm
```

```
# c
```

```
valBox = boxplot(val, main = " Question 4c", xlab = "Values", horizontal = TRUE)
```

```
# skewness
```

```
valSkewness = skewness(val)
```

```
valSkewness
```

Plot:

