From sweave to an R script

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1 The shoes data

Consider the shoes data from the MASS package:

```
> data(shoes, package="MASS")
> shoes

$A
 [1] 13.2  8.2 10.9 14.3 10.7  6.6  9.5 10.8  8.8 13.3

$B
 [1] 14.0  8.8 11.2 14.2 11.8  6.4  9.8 11.3  9.3 13.6
```

We shall do

- an unpaired t-test and
- a paired t-test

Compare two shoe types with a t-test:

```
> with(shoes, t.test(A, B))

        Welch Two Sample t-test

data:  A and B
t = -0.36891, df = 17.987, p-value = 0.7165
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -2.745046  1.925046
sample estimates:
mean of x mean of y
    10.63     11.04
```

The test is misleading because observations are paired. A better alternative is to make a paired t-test:

```
> with(shoes, t.test(A, B, paired=T))

        Paired t-test

data:  A and B
t = -3.3489, df = 9, p-value = 0.008539
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.6869539 -0.1330461
sample estimates:
mean of the differences
                  -0.41
```