



R Code for Examples in the book  
“Statistics: The Art and Science of Learning from Data”  
by Agresti, Franklin and Klingenberg, 5<sup>th</sup> edition

## Chapter 6

### Example 5: Risk Taking – Standard Deviation of a Probability Distribution

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#### Reading in the data for the sure strategy

```
gainsSure <- 500  
probsSure <- 1
```

#### To compute the variance

```
varianceSure <- sum(((gainsSure - mean(gainsSure)) ** 2) * probsSure)  
varianceSure  
## [1] 0
```

#### To compute the standard deviation

```
sqrt(varianceSure)  
## [1] 0
```

#### Reading in the data for the risk-taking strategy

```
gainsRisk <- c(0, 1000)  
probsRisk <- c(0.5, 0.5)
```

#### To compute the variance

```
varianceRisk <- sum(((gainsRisk - mean(gainsRisk)) ** 2) * probsRisk)  
varianceRisk  
## [1] 250000
```

#### To compute the standard deviation

```
sqrt(varianceRisk)  
## [1] 500
```