R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 6

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

Reading in the data for the sure strategy

```
gains_sure <- 500
probs_sure <- 1
```

To compute the variance

```
variance_sure <- sum(((gains_sure - mean(gains_sure)) ** 2) * probs_sure)
variance_sure
```

```
## [1] 0
```

To compute the standard deviation

```
sqrt(variance_sure)
```

```
## [1] 0
```

Reading in the data for the risk-taking strategy

```
gains_risk <- c(0, 1000)
probs_risk <- c(0.5, 0.5)
```

To compute the variance

```
variance_risk <- sum(((gains_risk - mean(gains_risk)) ** 2) * probs_risk)
variance_risk
```

```
## [1] 250000
```

To compute the standard deviation

```
sqrt(variance_risk)
```

```
## [1] 500
```