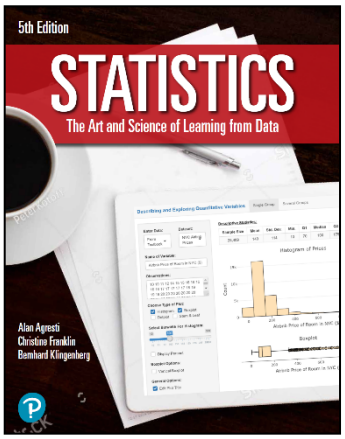

R Code for Examples in the book
"Statistics: The Art and Science of Learning from Data"
by Agresti, Franklin and Klingenberg, 5th edition

Chapter 8

Example 4: Influenza Vaccine – 99% Confidence Interval

Reading in sample proportion data

```
x <- 26
n <- 3900
phat <- x / n
```

To compute the standard error

```
se <- sqrt(phat * (1 - phat) / n)
se

## [1] 0.001303075
```

To compute the margin of error for a confidence level of 99%

```
zscore <- qnorm(0.995)
me <- zscore * se
me

## [1] 0.0033565
```

To compute the 99% confidence interval for the population proportion

```
phat + c(-1, 1) * me

## [1] 0.003310167 0.010023167
```

To compute the margin of error for a confidence level of 95%

```
zscore <- qnorm(0.975)
me <- zscore * se
me

## [1] 0.002553981
```

To compute the 99% confidence interval for the population proportion

```
phat + c(-1, 1) * me

## [1] 0.004112686 0.009220648
```