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6-1 Workshop 6.11, 6.12, 6.28c

**6.11**

Code

xbar=50

sigma=7

zstar = qnorm(.975,0,1)

moe=zstar\*sigma/sqrt(n)

CI=c(xbar-moe,xbar+moe)

CI

Answer

n=10, 45.66143 54.33857

n=20, 46.93217 53.06783

n=40, 47.83072 52.16928

n=80, 48.46609 51.53391

**6.12**

Code

xbar=70

sigma=14

n=49

zstar=qnorm(confidence+(1-confidence)/2,0,1)

moe=zstar\*sigma/sqrt(n)

CI=c(xbar-moe,xbar+moe)

CI

Answer

confidence=.80, 67.4369 72.5631

confidence=.90, 66.71029 73.28971

confidence=.95, 66.08007 73.91993

confidence=.99, 64.84834 75.15166

**6.28**

**c)**

Code

mpg = c(41.5,50.7,36.6,37.3,34.2,45.0,48.0,43.2,47.7,42.2,

43.2,44.6,48.4,46.4,46.8,39.2,37.3,43.5,44.3,43.3)

sigma=3.5

xbar=mean(mpg)

n=length(mpg)

zstar.95=qnorm(.95+(1-.95)/2)

moe.95=zstar.95\*sigma/sqrt(n)

CI.95=c(xbar-moe.95,xbar+moe.95)

Answer

CI.95 = 41.63609 44.70391