1. Breast-feeding mothers secrete calcium into their milk, and researchers suspect that some of that calcium comes from their bones. The percent change in mineral content of the spines of a random sample of $n = 9$ mothers during three months of breast-feeding is:

$-5.3\%, \ -7.8\%, \ -6.2\%, \ -2.1\%, \ -0.8\%, \ -5.3\%, \ -4.4\%, \ 0.4\%, \ -2.5\%$

Use these data to construct a 90% confidence interval for the mean bone loss percent μ in nursing mothers.

A. A 90% confidence interval is $(-4.744\%, -1.411\%)$.

B. A 90% confidence interval is $(-4.644\%, -1.311\%)$.

C. A 90% confidence interval is $(-5.444\%, -1.411\%)$.

D. A 90% confidence interval is $(-5.444\%, -2.111\%)$.

E. A 90% confidence interval is $(-5.444\%, -1.711\%)$.

F. A 90% confidence interval is $(-4.644\%, -2.111\%)$.

G. A 90% confidence interval is $(-4.644\%, -1.711\%)$.

H. A 90% confidence interval is $(-4.744\%, -1.311\%)$.

2. The following are a random sample of $n = 10$ IQ scores of seventh-grade girls from a school district in the Midwest:

105, 112, 114, 132, 118, 119, 98, 100, 103, 112

Construct a 99% confidence interval for the mean IQ score μ for the entire school district.

A. A 99% confidence interval is $(100.219, 121.781)$.

B. A 99% confidence interval is $(100.719, 122.581)$.

C. A 99% confidence interval is $(100.719, 121.881)$.

D. A 99% confidence interval is $(100.619, 121.881)$.

E. A 99% confidence interval is $(100.219, 121.381)$.

F. A 99% confidence interval is $(100.619, 121.781)$.

G. A 99% confidence interval is $(100.719, 121.381)$.

H. A 99% confidence interval is $(100.619, 122.581)$.

3. Suppose a sample of $n = 16$ newborn elephants are weighed. The sample mean is $\bar{x} = 261.856$ pounds, and the sample standard deviation is $s = 17.633$ pounds.

Use these data to construct a 95% confidence interval for the mean weight μ of newborn elephant calves.

A. A 95% confidence interval is $(251.66, 270.652)$.

B. A 95% confidence interval is $(252.46, 270.652)$.

C. A 95% confidence interval is $(252.46, 271.152)$.

D. A 95% confidence interval is $(252.46, 271.252)$.

E. A 95% confidence interval is $(251.66, 271.252)$.

F. A 95% confidence interval is $(252.36, 271.152)$.

G. A 95% confidence interval is $(252.36, 270.452)$.

H. A 95% confidence interval is $(251.66, 270.452)$.

4. Breast-feeding mothers secrete calcium into their milk, and researchers suspect that some of that calcium comes from their bones. The percent change in mineral content of the spines of a random sample of $n = 7$ mothers during three months of breast-feeding is:

-5.2%, -4.7%, -5.2%, -1%, -4.7%, -3.1%, -1%

Use these data to construct a 99% confidence interval for the mean bone loss percent μ in nursing mothers.

A. A 99% confidence interval is $(-5.997\%, -1.217\%)$.

B. A 99% confidence interval is $(-6.197\%, -1.217\%)$.

C. A 99% confidence interval is $(-6.197\%, -0.917\%)$.

D. A 99% confidence interval is $(-7.097\%, -1.817\%)$.

E. A 99% confidence interval is $(-7.097\%, -0.917\%)$.

F. A 99% confidence interval is $(-6.497\%, -1.217\%)$.

G. A 99% confidence interval is $(-5.997\%, -0.917\%)$.

H. A 99% confidence interval is $(-6.497\%, -1.817\%)$.

5. Suppose the volume of liquid in a sample of $n = 23$ twelve-fluid-ounce soda cans are measured in milliliters. The sample mean is $\bar{x} = 354.641$ milliliters, and the sample standard deviation is $s = 0.512$ milliliters.

Use these data to construct a 95% confidence interval for the mean volume of liquid μ contained in twelve-fluid-ounce soda cans.

A. A 95% confidence interval is $(354.92, 354.762)$.

B. A 95% confidence interval is $(354.32, 355.162)$.

C. A 95% confidence interval is $(354.32, 354.862)$.

D. A 95% confidence interval is $(354.92, 355.362)$.

E. A 95% confidence interval is $(354.42, 355.162)$.

F. A 95% confidence interval is $(354.42, 354.862)$.

G. A 95% confidence interval is $(354.42, 355.362)$.

H. A 95% confidence interval is $(354.32, 354.762)$.

6. Breast-feeding mothers secrete calcium into their milk, and researchers suspect that some of that calcium comes from their bones. The percent change in mineral content of the spines of a random sample of $n = 2$ mothers during three months of breast-feeding is:

$-5.2\%, \ -8.3\%$

Use these data to construct a 95% confidence interval for the mean bone loss percent μ in nursing mothers.

A. A 95% confidence interval is $(-26.244\%, 13.144\%)$.

B. A 95% confidence interval is $(-26.544\%, 13.144\%)$.

C. A 95% confidence interval is $(-26.544\%, 12.844\%)$.

D. A 95% confidence interval is $(-26.444\%, 12.944\%)$.

E. A 95% confidence interval is $(-26.644\%, 12.844\%)$.

F. A 95% confidence interval is $(-26.644\%, 12.944\%)$.

G. A 95% confidence interval is $(-26.444\%, 12.844\%)$.

H. A 95% confidence interval is $(-26.244\%, 12.944\%)$.

7. The standard deviation of the weights of elephants is known to be approximately 15 pounds. Suppose 91 newborn elephants are weighed, and the sample mean is 249.264 pounds. The sample standard deviation is 11.393 pounds.

Fill in the blank with the correct number: $\sigma =$ _____

A. 89

B. 245.774

C. 15

D. 11.393

E. 91

F. 249.264

G. 13.81

H. 17

8. Suppose a sample of $n = 79$ newborn elephants are weighed. The sample mean is $\bar{x} = 218.36$ pounds, and the sample standard deviation is $s = 14.415$ pounds.

Use these data to construct a 99% confidence interval for the mean weight μ of newborn elephant calves.

A. A 99% confidence interval is $(213.978, 222.542)$.

B. A 99% confidence interval is $(213.978, 223.342)$.

C. A 99% confidence interval is $(214.778, 223.342)$.

D. A 99% confidence interval is $(214.978, 222.642)$.

E. A 99% confidence interval is $(214.078, 222.542)$.

F. A 99% confidence interval is $(214.078, 222.642)$.

G. A 99% confidence interval is $(214.978, 222.542)$.

H. A 99% confidence interval is $(214.778, 222.642)$.