6.28

Suppose a random sample of $n = 25$ measurements is selected from a population with mean μ and standard deviation σ. For each of the following values of μ and σ, give the values of $\mu_{\bar{x}}$ and $\sigma_{\bar{x}}$.

a. $\mu = 10, \sigma = 3$
b. $\mu = 100, \sigma = 25$
c. $\mu = 20, \sigma = 40$
d. $\mu = 10, \sigma = 100$

a. $\mu_{\bar{x}} = 10$ $\quad \sigma_{\bar{x}} = \frac{3}{\sqrt{25}} = \frac{3}{5}$

b. $\mu_{\bar{x}} = 100$ $\quad \sigma_{\bar{x}} = \frac{25}{\sqrt{25}} = 5$

c. $\mu_{\bar{x}} = 20$ $\quad \sigma_{\bar{x}} = \frac{40}{\sqrt{25}} = 8$

d. $\mu_{\bar{x}} = 10$ $\quad \sigma_{\bar{x}} = \frac{100}{\sqrt{25}} = 20$