The distribution of weights of 9-ounce bags of a particular brand of potato chips is approximately Normal with mean = 9.12 ounces and standard deviation = 0.15 ounce.

a. If one bag is selected, what is the probability that it weighs less than the advertised weight of 9 ounces?

from pop.

population

$$z = \frac{9 - 9.12}{.15} = -.80$$

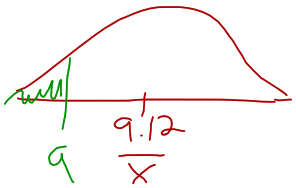
$P(z < -.80) = .2119 \approx .21$

b. If 5 bags are opened, what is the probability that 3 of the 5 bags weigh less than the advertised weight?

$$P(x = 3) = \binom{5}{3}(.21)^3(.79)^2 = \text{bpdf}(5, .21, 3) = .0578$$

c. If a sample of 10 bags is taken, what is the probability that the mean weight is less than 9 ounces?

CLT



$\mu_{\bar{x}} = 9.12$

$$\sigma_{\bar{x}} = \frac{.15}{\sqrt{10}} = .0474$$

$$z = \frac{9 - 9.12}{.0474} = -2.53$$

$P(z < -2.53) = .0057$