

$$P(A \cap B) = P(A) \times P(B/A)$$

$$P(B \cap A) = P(B) \times P(A/B)$$

6. 70% purchase coffee $\rightarrow P(A)$
 40% purchase cake $\rightarrow P(B)$
 20% $\rightarrow P(A \cap B)$

~~$$P(B/A) = P(A/B) \times P(B)$$~~

\swarrow
 $P(A \cap B)$

$$P(A/B) = \frac{P(A \cap B)}{P(B)}$$

$$= \frac{0.2}{0.4}$$

$$= \frac{1}{2}$$

7. $\mu_p = 50, \sigma_p = 6$

$$N = 16$$

$$SE = \frac{\sigma}{\sqrt{16}}$$

$$= \frac{6}{\sqrt{16}}$$

$$= 6/4$$

$$= 3/2 = 1.5$$

a

$$\sigma_p = 6$$

$$\mu_p = 1.5$$

b

$$SE = \frac{\sigma}{\sqrt{20}}$$

$$= \frac{6}{\sqrt{20}}$$

$$= 1.34$$

8. $\mu = 100, \sigma = 12$

a

$$Z = \frac{110 - 100}{\sigma}$$

$$= \frac{10}{12}$$

$$= \frac{5}{6}$$

b

$$= 0.833$$

$$Z = 0.84$$

$$0.79955$$

$$= 1 - 0.79955$$

$$= 0.21$$

b. $N = 25, > 105$

$$SE = \frac{\sigma}{\sqrt{N}}$$

$$= \frac{12}{5}$$

$$= 2.4$$

$$\frac{5(12) \sim 9}{10 \times 20}$$

$$Z = \frac{105 - 100}{2.4}$$

$$= \frac{5}{2.4} = 2.08$$

$$0.98124$$

$$1 - 0.98124$$

$$= 0.019$$

