

#4-20

Ans

$$X \sim N(16, 5)$$

$$a) P(X > 20) = P(Z > \frac{20-16}{5}) = P(Z > 0.8) = \boxed{0.212}$$

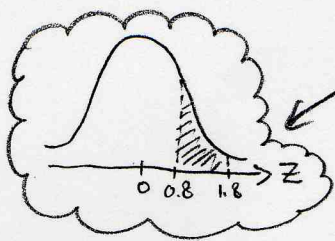
$$b) P(20 < X < 25) = P(\frac{20-16}{5} < Z < \frac{25-16}{5})$$

$$= P(0.8 < Z < 1.8)$$

$$= P(Z > 0.8) - P(Z > 1.8)$$

$$= 0.212 - 0.036$$

$$= \boxed{0.176}$$

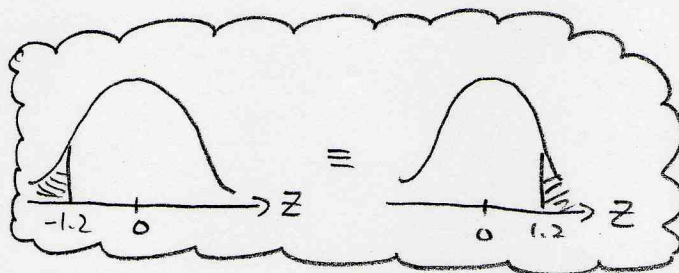


$$c) P(X < 10) = P(Z < \frac{10-16}{5})$$

$$= P(Z < -1.2)$$

$$= P(Z > 1.2)$$

$$= \boxed{0.115}$$



$$d) P(12 < X < 24) = P(\frac{12-16}{5} < X < \frac{24-16}{5})$$

$$= P(-0.8 < X < 1.6)$$

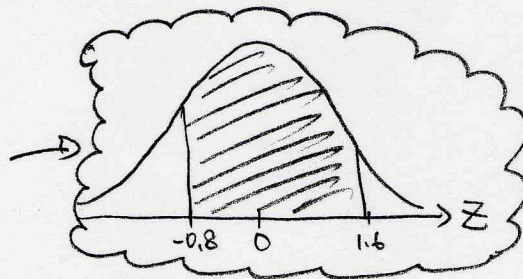
$$= P(Z > -0.8) - P(Z > 1.6)$$

$$= [1 - P(Z < -0.8)] - P(Z > 1.6)$$

$$= [1 - P(Z > 0.8)] - P(Z > 1.6)$$

$$= 1 - 0.212 - 0.055$$

$$= \boxed{0.733}$$



#4-23 see HW4 solution.