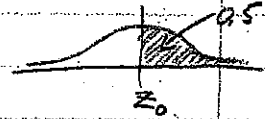


4.72

- a) 1
 b) -1
 c) 0
 d) -2.5
 e) 3

4.76

a) $P(X \geq x_0) = 0.5 = P\left(Z \geq \frac{x_0 - 30}{8}\right)$
 let $\boxed{z_0 = \frac{x_0 - 30}{8}}$

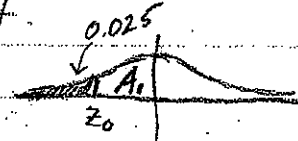


$$P(Z \geq z_0) = 0.5 \Rightarrow z_0 = 0$$

$$\Rightarrow \frac{x_0 - 30}{8} = 0$$

$$\Rightarrow \boxed{x_0 = 30}$$

b) $P(X < x_0) = 0.025$



$$P(X < x_0) = 0.025 \Rightarrow P\left(Z < \frac{x_0 - 30}{8}\right) = 0.025$$

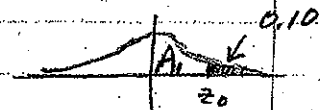
$$A_1 = 0.5 - 0.025 = 0.475$$

Look up 0.475 in Table III we find $z_0 = -1.96$ since we are to the left of 0.

$$z_0 = -1.96 = \frac{x_0 - 30}{8} \Rightarrow \boxed{x_0 = 14.32}$$

c) $P(X > x_0) = 0.10$

$$\Rightarrow P\left(Z > \frac{x_0 - 30}{8}\right) = 0.10$$



$A_1 = 0.5 - 0.10 = 0.40$. Look up 0.400 in Table III

$$\Rightarrow z_0 = 1.28 = \frac{x_0 - 30}{8} \Rightarrow \boxed{x_0 = 40.24}$$

$$\frac{4.78}{N(11, 3.5)}$$

(2)

$$a) \frac{x_0 - \mu}{\sigma} = \frac{16 - 11}{3.5} \Rightarrow \boxed{z_0 = 1.4286}$$

$$b) P(10 < X_0 < 15) = P(-0.2857 < Z < 1.1429) \approx \underline{\underline{0.4859}}$$



$$c) P(X > 17) = P(Z > 1.7143) \approx \underline{\underline{0.0432}}$$

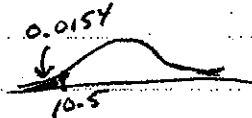


$$\frac{4.84}{N(24.1, 6.30)}$$

$$a) P(X > 20) \approx \underline{\underline{0.7424}}$$



$$b) P(X < 10.5) \approx \underline{\underline{0.0154}}$$



c) It is unlikely that this individual participates in an exercise program. The probability that the patient does is less than 2%.