Oppg. 1

1. $X \sim N(225, 15^2)$

(a) $P(X > 240) = P\left(Z > \frac{240-225}{15}\right)$

$= P(Z > 1)$

$= 1 - P(Z \leq 1)$

$= 1 - 0.8413$

$= 0.1587$

$P(210 < X \leq 240) = P\left(\frac{210-225}{15} < Z \leq 1\right)$

$= P(-1 < Z \leq 1)$

$= P(Z \leq 1) - P(Z \leq -1)$

$= 0.8413 - 0.1587$

$= 0.6826$

(b) $Y = \sum_{i=1}^{4} X_i$

X_i vaarhengia $\Rightarrow Y \sim N(900, 30^2)$

$P(Y > 960) = P\left(Z > \frac{960-900}{30}\right)$

$= P(Z > 2)$

$= 1 - P(Z \leq 2)$

$= 1 - 0.9772$

$= 0.0228$

$P(Y \leq b) = 0.95$

$P\left(Z \leq \frac{b-900}{30}\right) = 0.95$

$$P\left(Z \le \frac{k-900}{30}\right) = 0.95$$

$$\Rightarrow \frac{k-900}{30} = 1.645$$

$$\Rightarrow k = 949.35$$