

1. Dik : $n = 50$

$$P(\text{gagal}) = 5 \rightarrow \frac{5}{50} = 0,1$$

Dit :

$$a) P(x=0) = 0,0052$$

$$\begin{aligned} b) P(x \geq 2) &= 1 - P(x < 2) \\ &= 1 - P(x=1) \\ &= 1 - 0,0338 \\ &= 0,9662 \end{aligned}$$

$$\begin{aligned} c) P(x=3) &= P(x=3) - P(x=2) \\ &= 0,2503 - 0,1117 \\ &= 0,1386 \end{aligned}$$

$$\begin{aligned} d) P(x \leq 6) &= P(x=6) \\ &= 0,7702 \end{aligned}$$

2. Dik : $n = 60$

$$P(\text{gagal}) = 10 \rightarrow \frac{10}{40} = 0,25$$

Dit :

$$a). \text{Lulus} = 25$$

$$\text{gagal} = 35$$

$$\begin{aligned} P(x = 60 - 35) &= P(x = 25) = P(x = 25) - P(x = 24) \\ &= 0,999 - 0,997 \\ &= 0,002 \end{aligned}$$

$$\begin{aligned} b.) P(x \leq 3) &= P(x=3) \\ &= 0,000 \end{aligned}$$

$$\begin{aligned} c.) P(x \geq 8) &= 1 - P(x < 8) \\ &= 1 - P(x=7) \\ &= 1 - 0,009 \\ &= 0,991 \end{aligned}$$

$$d.) P(x=0) = 0,000$$

3. Dik: $n = 12$

$$p(\text{lulus}) = 24 \rightarrow \frac{24}{120} = 0,2$$

Dit:

$$a.) P(x=0) = 0,0687$$

$$b.) P(x \leq 3) = P(x=3) \\ = 0,7946$$

$$c.) P(x=5) = P(x=5) - P(x=4) \\ = 0,9806 - 0,9274 \\ = 0,0532$$

4. Dik: $n = 30$

$$p(\text{gagal}) = 9 \rightarrow \frac{9}{30} = 0,3$$

Dit:

$$a.) P(x=4) = P(x=4) - P(x=3) \\ = 0,0302 - 0,0093 \\ = 0,0209$$

$$b.) P(x=30-9=21) \Rightarrow P(x=21) = P(x=21) - P(x=20) \\ = 1,0000 - 1,0000 \\ = 0$$

$$c.) P(x \leq 5) = P(x=5) \\ = 0,0766$$

5. Dik: $\mu = 57,5$

$\sigma = 3$

Dit:

a.) $P(X < 45)$

$x = 45$

$$z = \frac{(x - \mu)}{\sigma}$$

$$= \frac{(45 - 57,5)}{3}$$

$$= \frac{-12,5}{3}$$

$$= -4,16$$

b.) $P(60 < x < 80)$

• $x_1 = 60$

$$z = \frac{(x_1 - \mu)}{\sigma}$$

$$= \frac{(60 - 57,5)}{3}$$

$$= \frac{2,5}{3}$$

$$= 0,83$$

• $x_2 = 80$

$$z = \frac{(x_2 - \mu)}{\sigma}$$

$$= \frac{(80 - 57,5)}{3}$$

$$= \frac{22,5}{3}$$

$$= 7,5$$

$$P(0,83 < x < 7,5)$$

$$\therefore P(60 < x < 80) = P(0,83 < x < 7,5)$$

$$= P(z < 7,5) - P(z < 0,83)$$

$$= 0,9999 - 0,7967$$

$$= 0,2032$$