1] $\hat{Y} = 1.6394X + 4352.5$

✓1] yes equal spread

✓2] yes indep. assumption satisfied (random pattern)

a) Format Cells ⇒ Sort Cells ⇒ Values

Q.2] Smallest residual 4.6012 ≈ 4.6

3/b Largest residual 1752.111 ≈ 1752.1

Summary statistics ⇒ gives most information (use instead formula)

4/c median = −142.63097 ≈ −142.6

5/d mean = −0.05439 ≈ −0.1

6/e SD = 697.004 ≈ 697

7]

$T = t_1 + t_2 + t_3 + t_4 + t_5 + t_6 + t_7$

$E(T) = 8 + 14 + \cdots + 10 = 90$

$Var(T) = Var(t_1) + Var(t_2) + \cdots + Var(t_7)$

$= 2^2 + 3^2 + 2^2 + \cdots + 3^2 = 64$

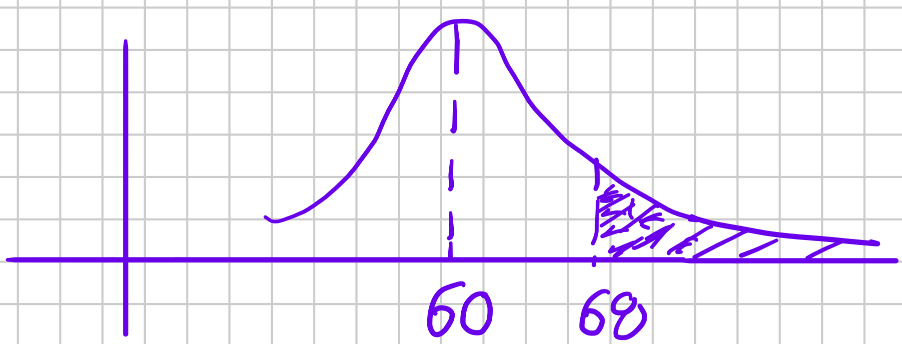
$SD(T) = \sqrt{64} = 8$

8)

$E(T_2) = 60$ <u>Normal</u>

$SD(T_2) = 6$

$P(T_2 > 68)$



1 − Normdist(68, 60, 6, 1)
x μ SD

$1 - 0.90878878 = \underline{0.0912}$

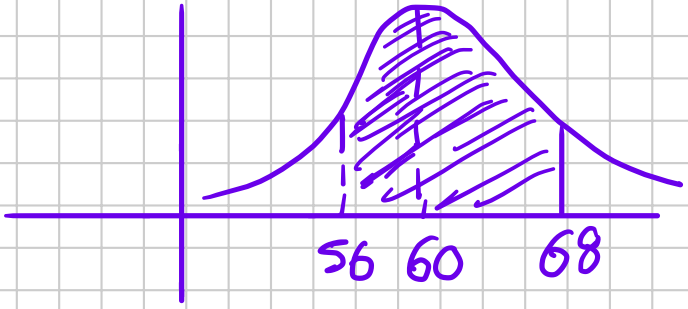
9)

$P(T_2 < 56)$

$= \text{Norm.Dist}(56, 60, 6, \text{True})$

$= 0.25249 \approx \underline{\underline{0.2525}}$

10] $P(56 < T_2 < 68) = P(T_2 < 68) - P(T_2 < 56)$

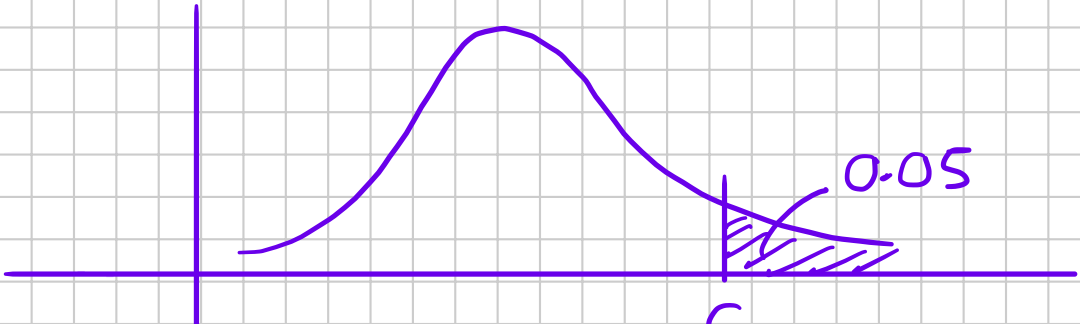


$= 0.90878878 - 0.25249$

$= 0.65629$

$= \boxed{0.6563}$

11/d] $P(T_2 > c) = 0.05$



$P(T_2 < C) = 0.95$

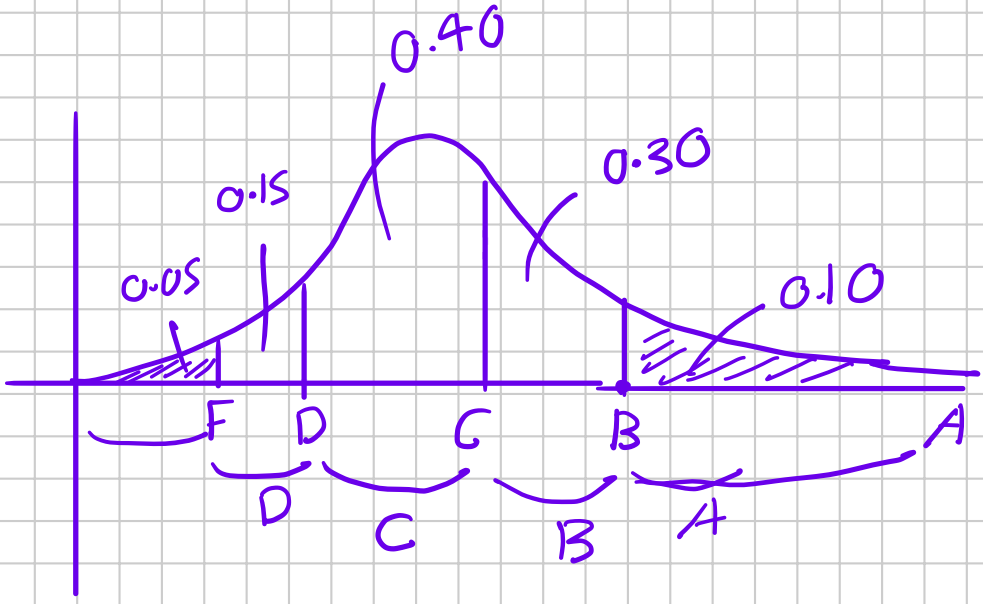
Norm.Inv(0.95, 60, 6) = 69.8691218

↓ P ↓ μ ↓ σ

$\approx \underline{69.8691}$

$= \boxed{70}$ whole number

12) mean = 70 SD = 10



$P(X < F) = 0.05$

Norm.Inv(0.05, 70, 10) = 53.55146

$\approx \underline{54}$ D

$P(X < D) = 0.20$

Norm.Inv(0.20, 70, 10) = 61.5838 ≈ 62 C

$P(X < C) = 0.60$

Norm.Inv(0.6, 70, 10) = 72.5335 ≈ 73 B

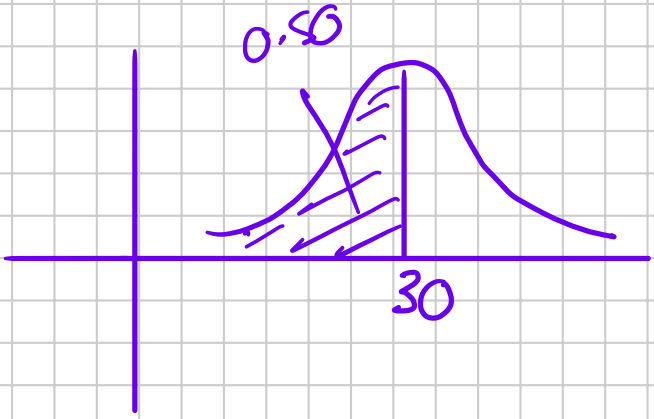
$P(X < B) = 0.90$

Norm.Inv(0.90, 70, 10) = 82.8155157 ≈ 83 A

13) model 8 $\mu = 30$ SD = 3

model 8+ $\mu = 20$ SD = 4

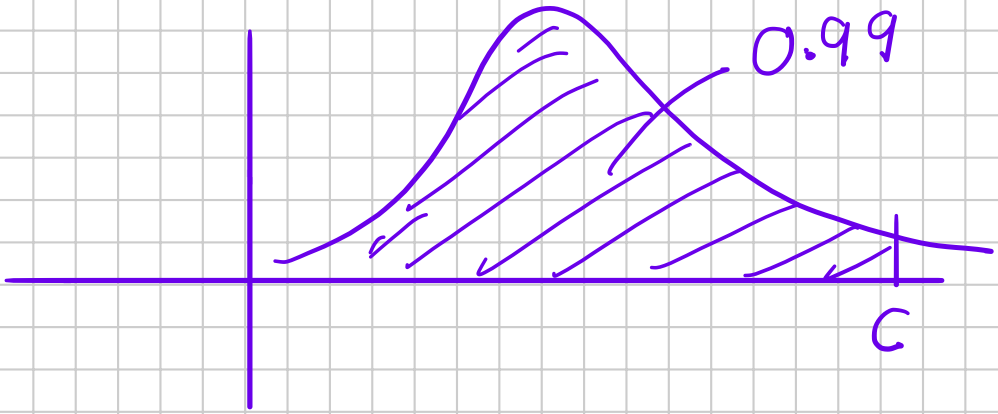
i) P(Demand ≤ 30) = 0.50



Norm.Dist(30, 30, 3, 1) = 0.50

$x \quad \mu$

ii) $P(\text{Demand} < C) = 0.99$



Norm.Inv (0.99, 30, 3) = 36.9790436

$\approx \underline{\underline{37}}$

13/ ii) 8 plus

Norm.Inv (0.99, 20, 4) = 29.3053915

$\approx \underline{\underline{30}}$

Number of 8 plus screens = 30

iii)

X screen can fix both model 8 and 8+

$E(x) = 30 + 20 = 50$

$Var(x) = 9 + 16 = 25$

$= Var(g) + Var(g+)$

$SD(x) = 5$

$P(x < c) = 0.99$

$Norm.Inv(0.99, 50, 5) = 61.6317394$

$\approx \boxed{62}$