

9. PERT calculations yield a project length of 50 weeks with a variance of 16. Within how many weeks would you expect the project to be completed with a probability of 95%, 75% & 40%.

Given: z value for 95% = 1.65
 z value for 75% = 0.69
 z value for 40% = -0.25

→ Project length = T_E = 50 weeks

Variance = 16 \therefore std. deviatⁿ = $\sqrt{16} = 4$

$$\therefore \boxed{\sigma = 4}$$

① For 95%, $z = 1.65$

$$z = \frac{T_S - T_E}{\sigma}$$

$$\therefore 1.65 = \frac{T_S - 50}{4} \quad \therefore T_S = 56.6 \text{ weeks}$$

② For 75%, $z = 0.69$

$$z = \frac{T_S - T_E}{\sigma}$$

$$\therefore 0.69 = \frac{T_S - 50}{4} \quad \therefore T_S = 52.76 \text{ weeks}$$

③ For 40%, $z = -0.25$

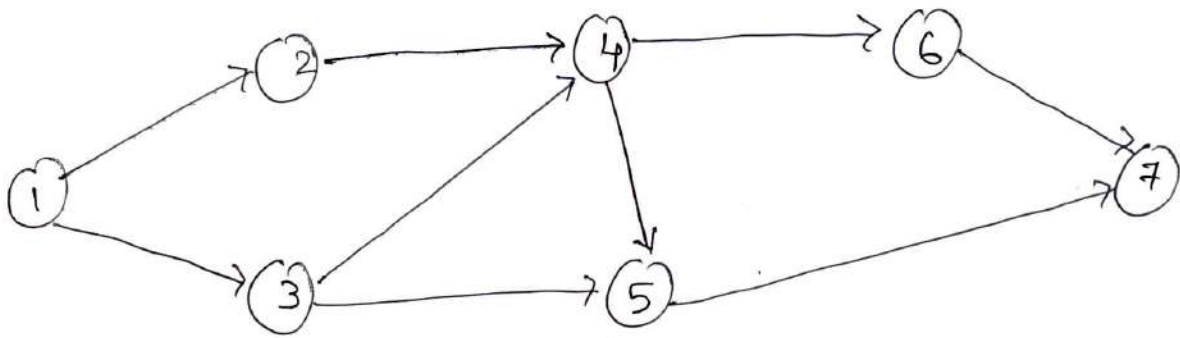
$$z = \frac{T_S - T_E}{\sigma}$$

$$-0.25 = \frac{T_S - 50}{4} = 49 \text{ weeks}$$

Q. Construct n/w diagram & find expected project duration. What will be the chances of completing a work in 26 day? The activities of production schedule are as follows:

Activity	1-2	1-3	2-4	3-4	3-5	4-5	4-6	5-7	6-7
T_o	1	1	4	2	2	6	2	3	1
T_m	2	4	6	4	4	7	5	5	2
T_p	3	7	8	12	12	8	14	13	15

* Feedback Values



Activity	t_o	t_m	t_p	t_e	σ	ν
1-2	1	2	3	2	0.33	0.11
1-3	1	4	7	4	1	1
2-4	4	6	8	6	0.66	0.44
3-4	5	9	13	9	1.33	1.77
3-5	2	4	12	5	1.67	2.77
4-5	6	7	8	7	0.33	0.11
4-6	2	5	14	6	2	4
5-7	3	5	13	6	1.67	2.77
6-7	1	2	15	4	2.33	5.44

variance along c.p = 5.65
 deviation $\rightarrow \sqrt{5.65}$
 $= 2.376$

$T_E = 26$ days

$Z = 0$

$\therefore \text{Prob} = 50\%$