

Estudo de Caso 4

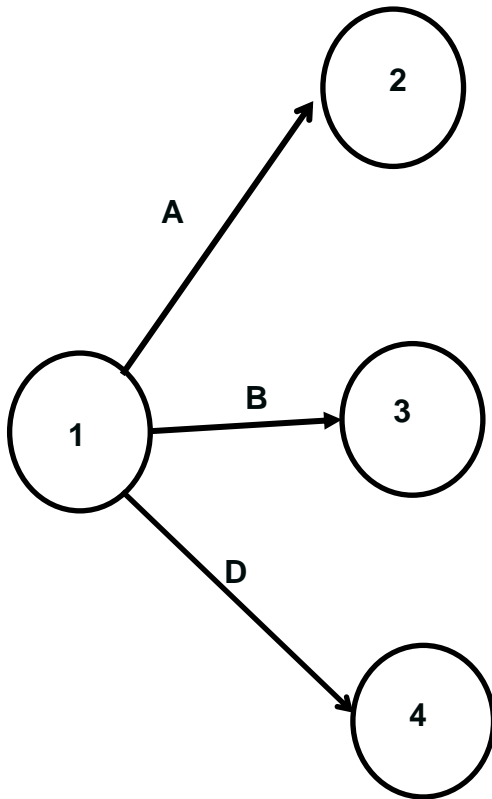
Gabarito

Exercício

Atividade	Precedência
A	---
B	---
C	A
D	---
E	B
F	B,C
G	D,E
H	G
I	G
J	H,I
K	F

- ✚ Fazer a rede de eventos
- ✚ Fazer a rede de atividades

Resolução: Rede de Eventos



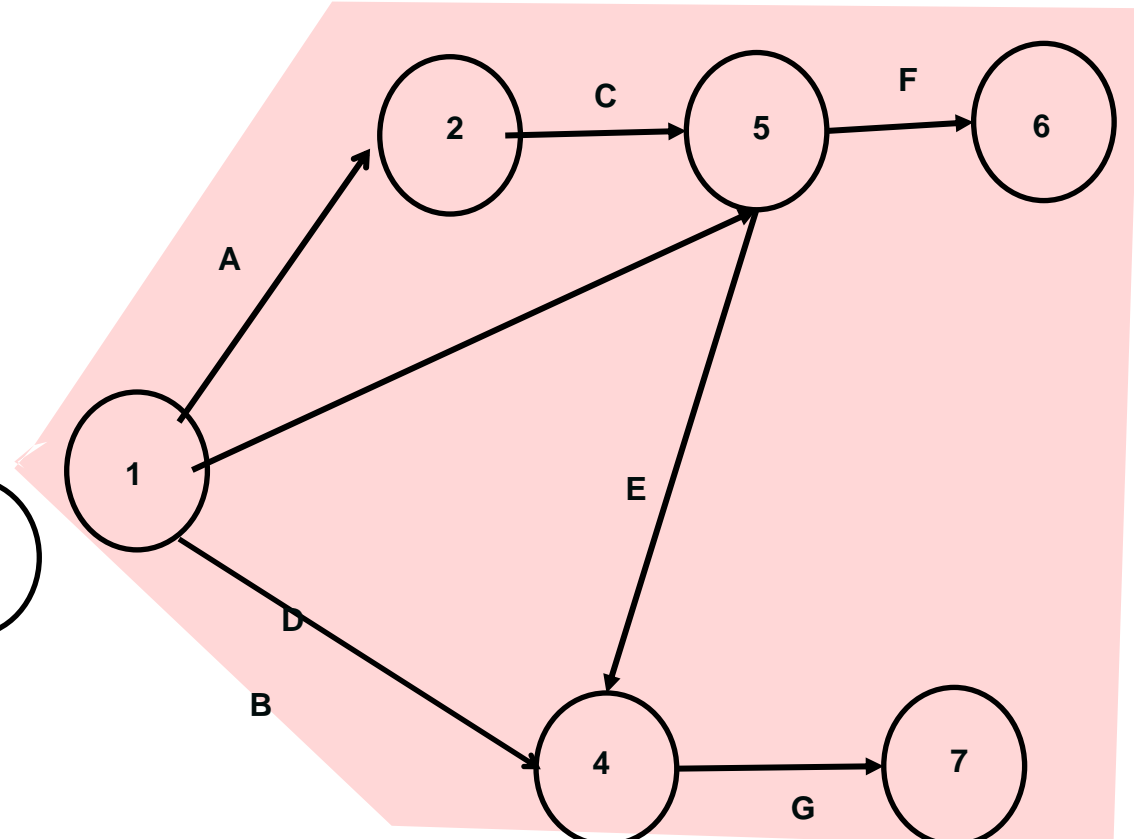
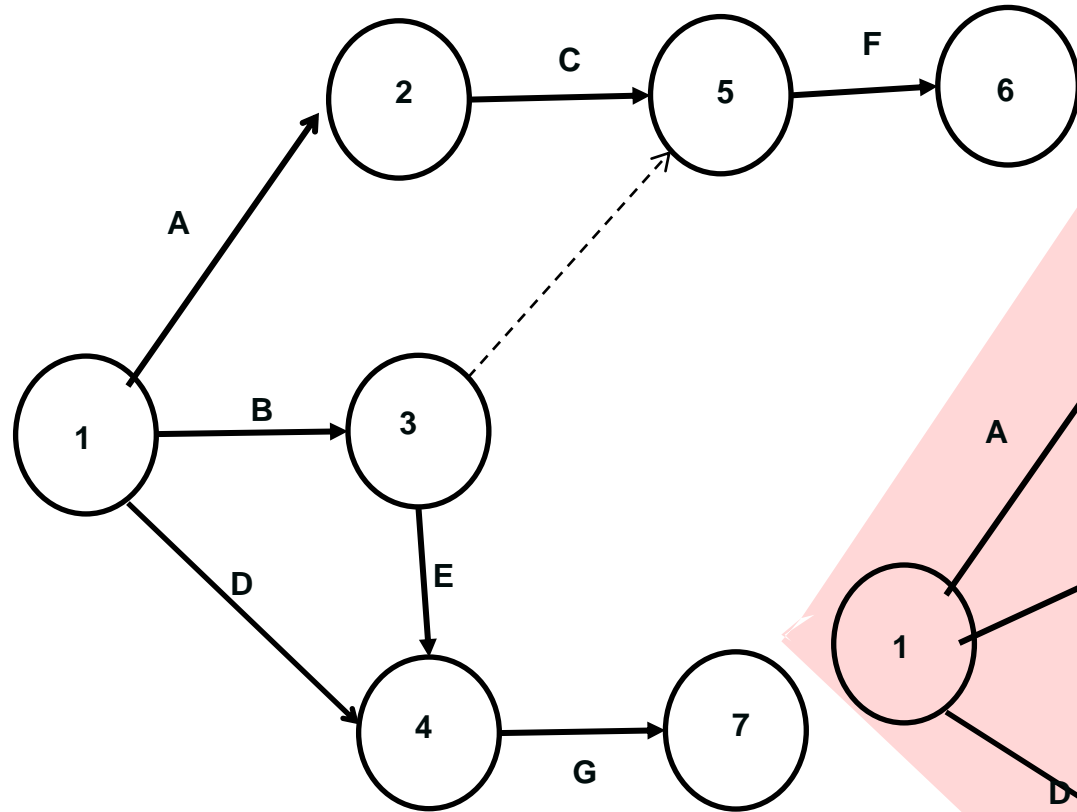
Atividade	Precedência
A	---
B	---
D	---

Parte-se da origem com as atividades que não tem precedência

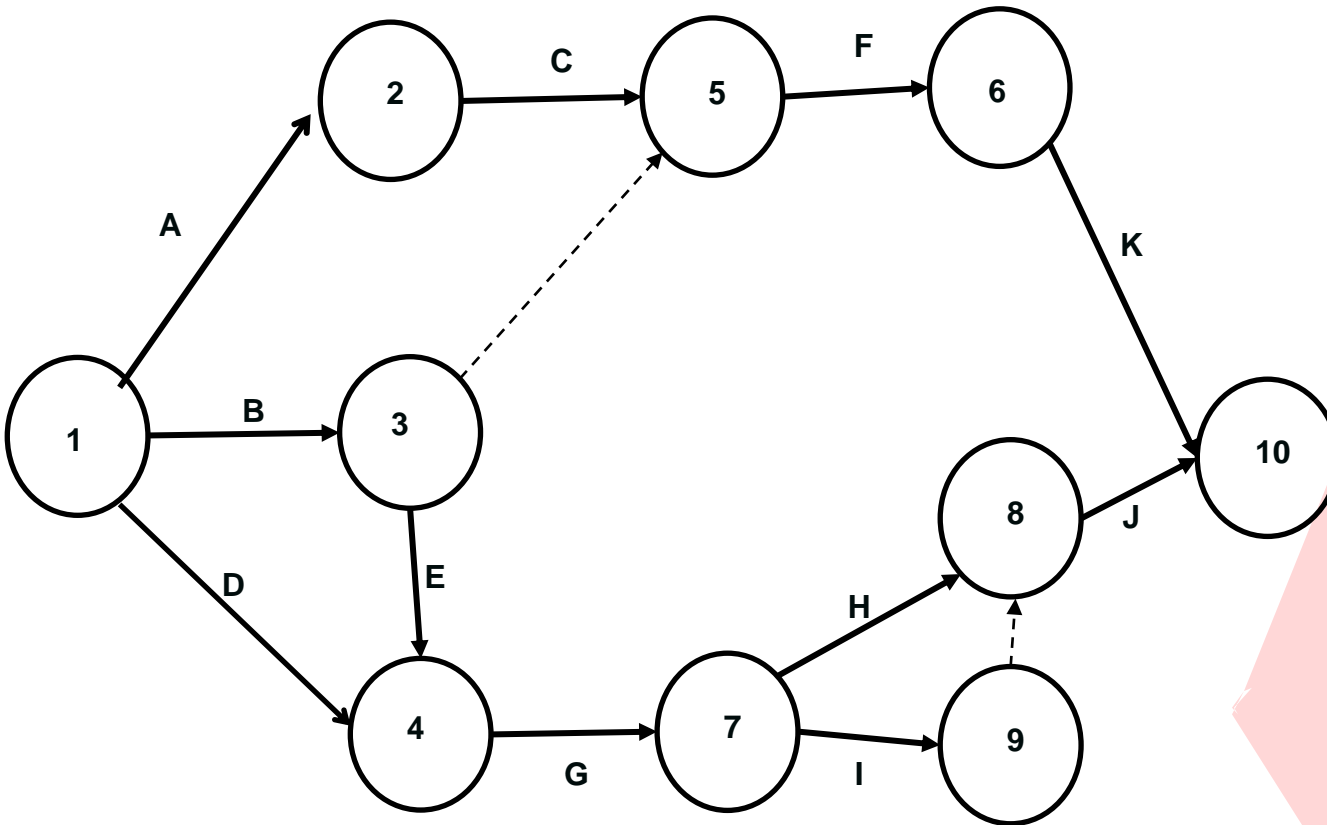
A, B & D podem ocorrer simultaneamente e não tem precedência

Resolução: Rede de Eventos

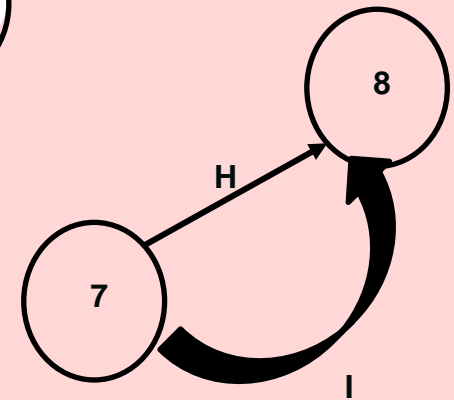
Atividade	Precedência
C	A
E	B
F	B,C
G	D,E



Resolução: Rede de Eventos



Atividade	Precedência
H	G
I	G
J	H,I
K	F



Exercício

$$d_{ij} = (O+4M+P)/6$$

$$\sigma_{ij}^2 = [(P-O)/6]^2$$

Atividade	Precedência	O	M	P	d_{ij}	σ^2
A	----	1	2.5	7	3	1
B	----	1	3	11	4	2.8
C	A	5	7	15	8	2.8
D	B	2	4	12	5	2.8
E	C,D	3	4.5	9	5	1
F	A	9	14	25	15	7.1
G	E,F	1	1	1	1	0
H	C,D	4	11	12	10	1.8
I	B	1	2	9	3	1.8
J	G,H,I	1.5	2.5	12.5	4	3.36

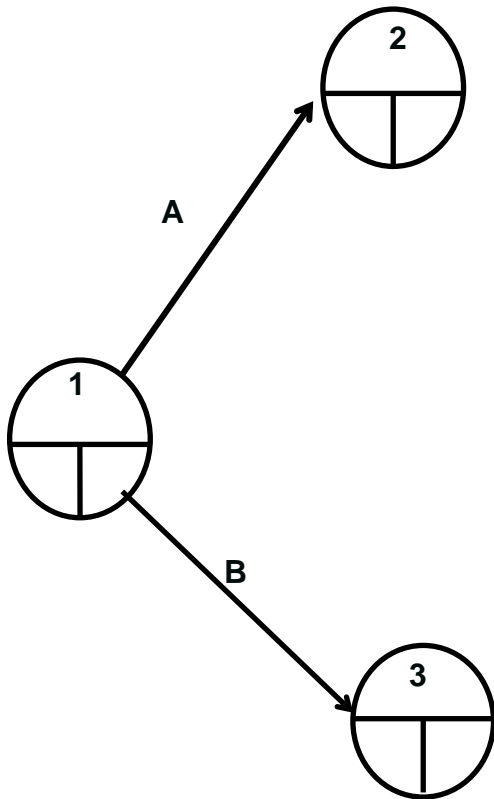
Exercício

Atividade	Precedência
A	----
B	----
C	A
D	B
E	C,D
F	A
G	E,F
H	C,D
I	B
J	G,H,I

- Fazer a rede de eventos
- Fazer a rede de atividades

Resolução: Rede de Eventos

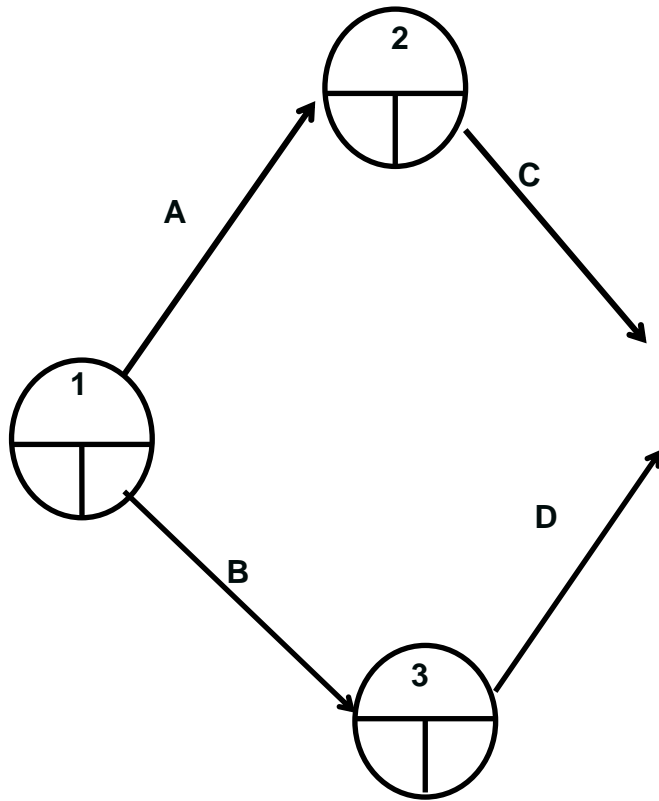
Atividade	Precedência
A	---
B	---



Parte-se da origem com as atividades que não tem precedência

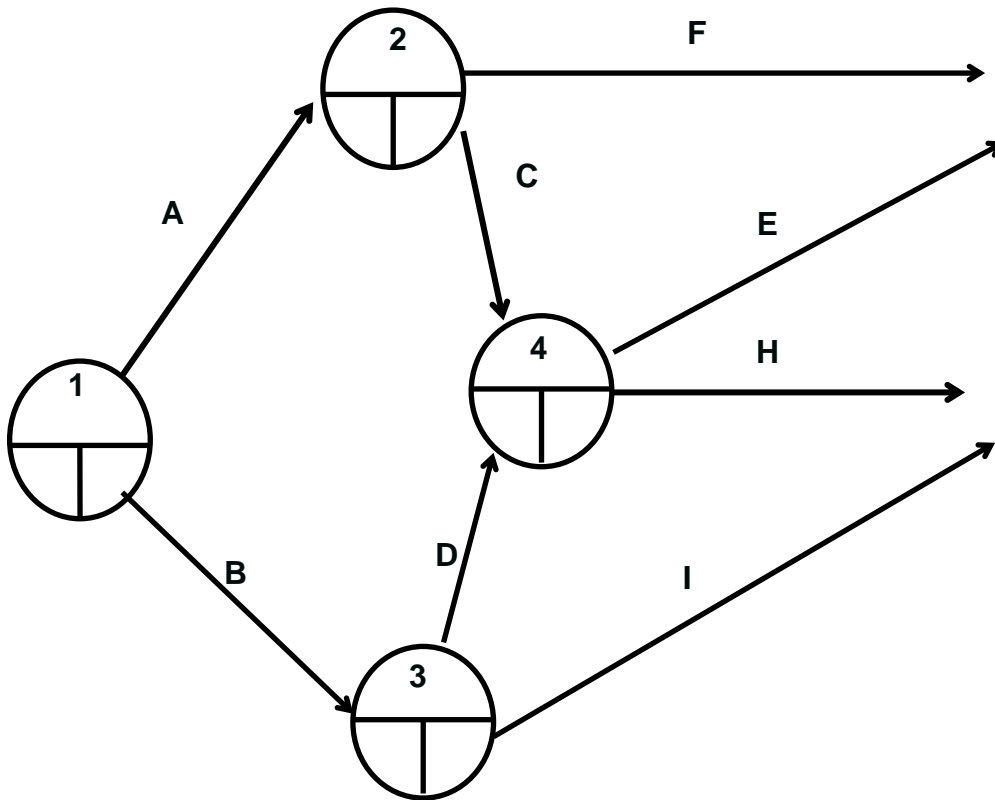
A & B podem ocorrer simultaneamente e não tem precedência

Resolução: Rede de Eventos



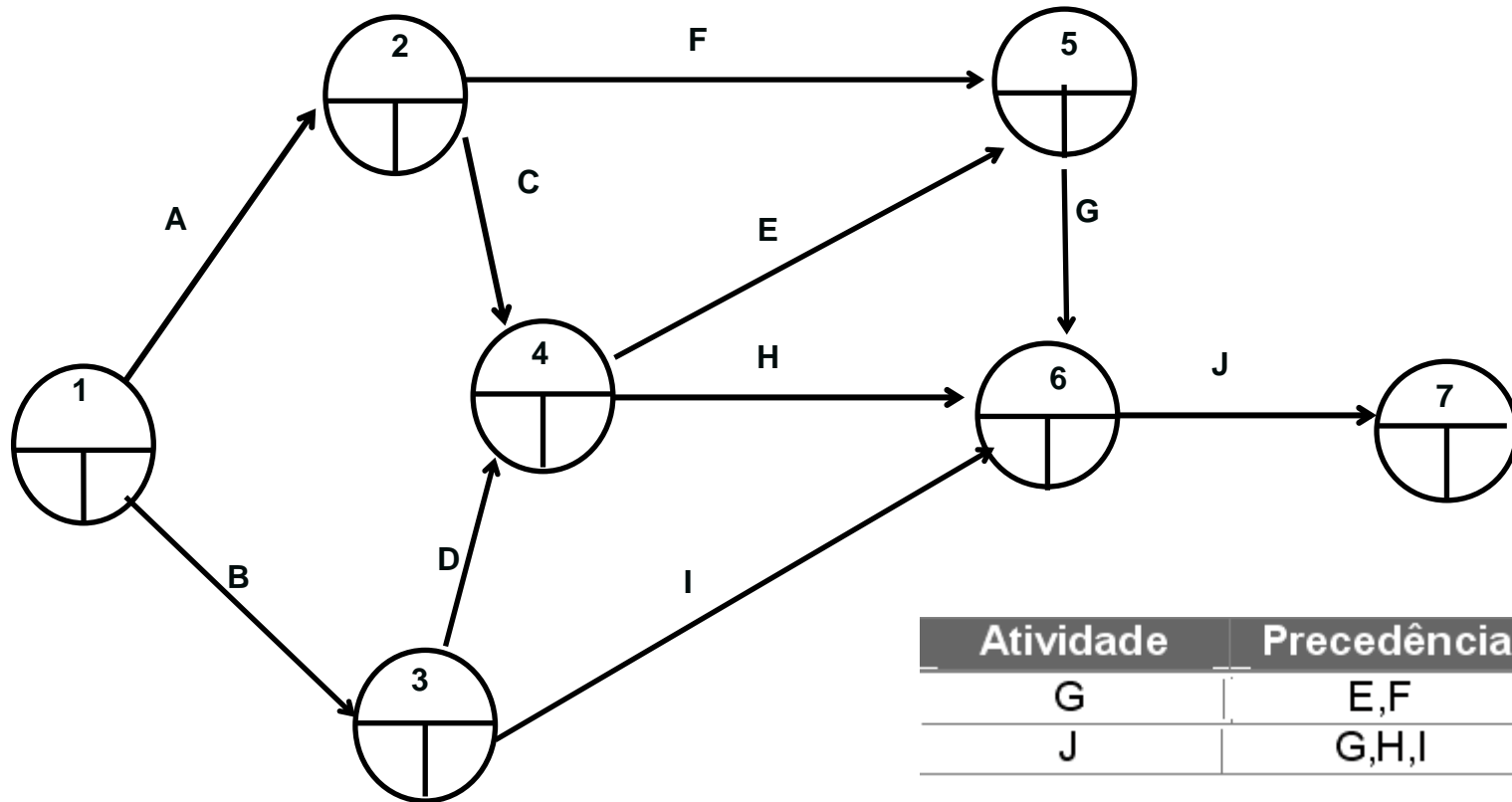
Atividade	Precedência
C	A
D	B

Resolução: Rede de Eventos

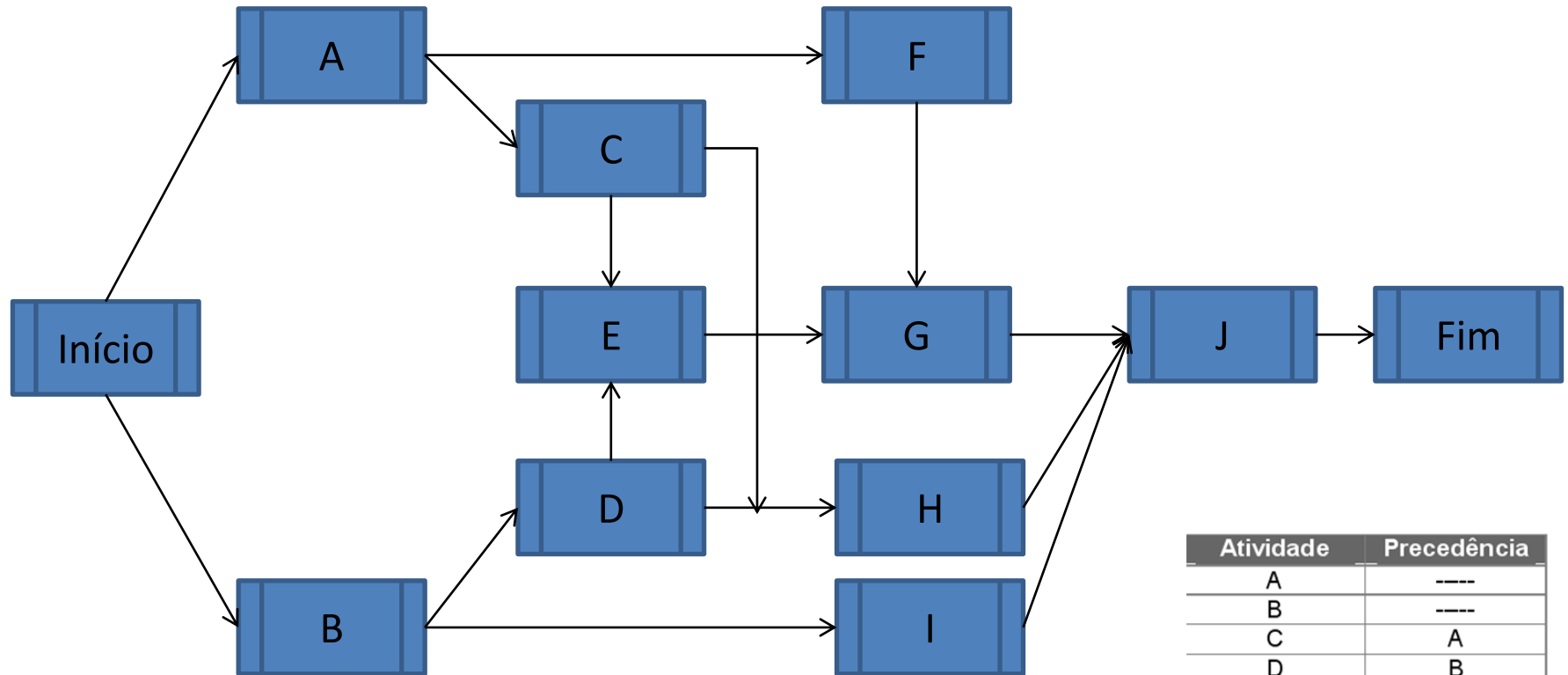


Atividade	Precedência
E	C,D
F	A
H	C,D
I	B

Resolução: Rede de Eventos

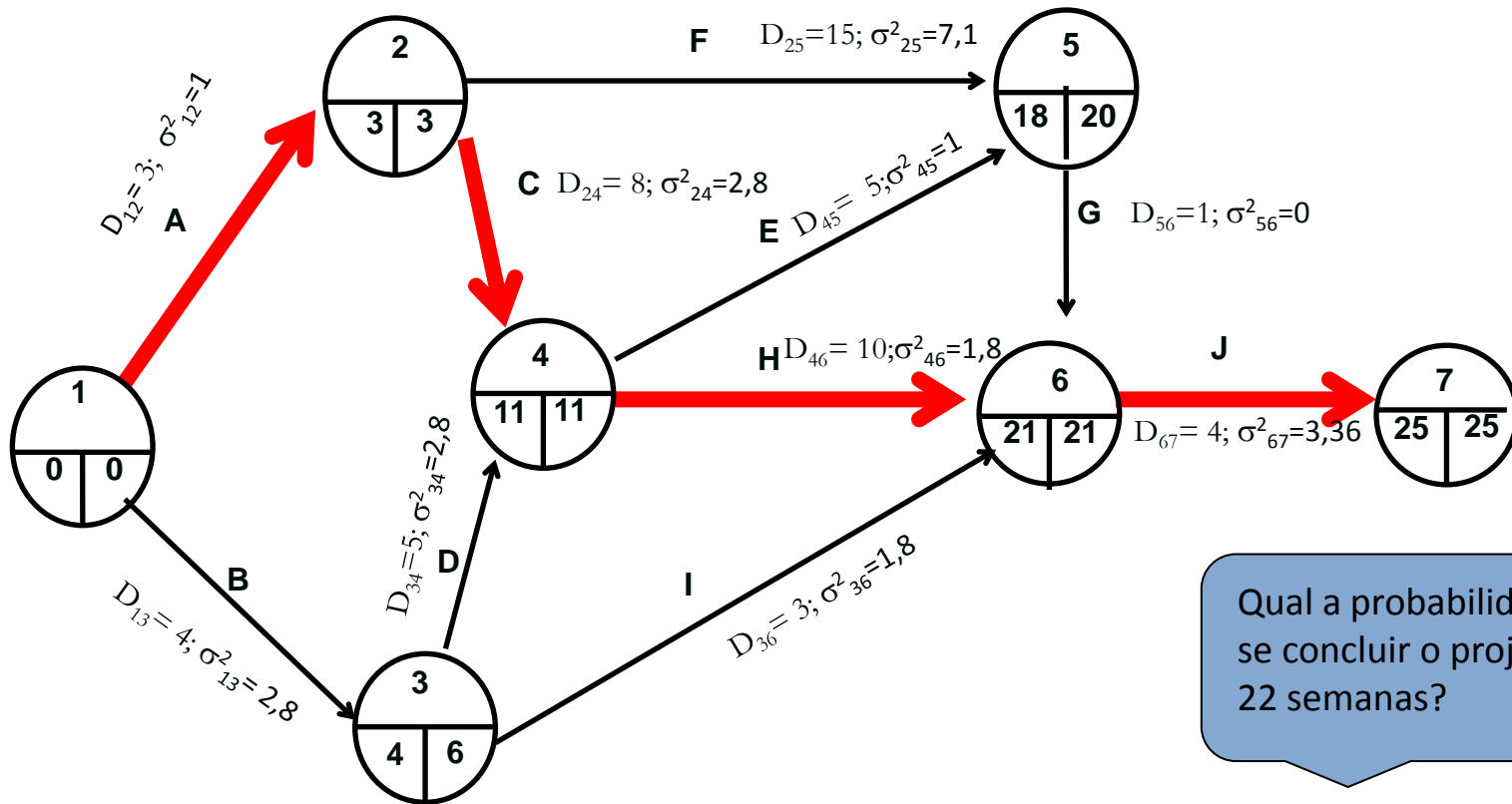


Resolução: Rede de Atividades



Atividade	Precedência
A	----
B	----
C	A
D	B
E	C,D
F	A
G	E,F
H	C,D
I	B
J	G,H,I

Gabarito

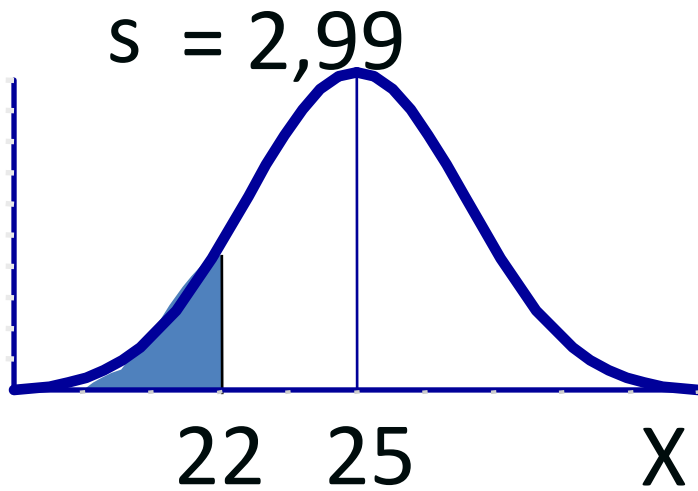


Qual a probabilidade de se concluir o projeto em 22 semanas?

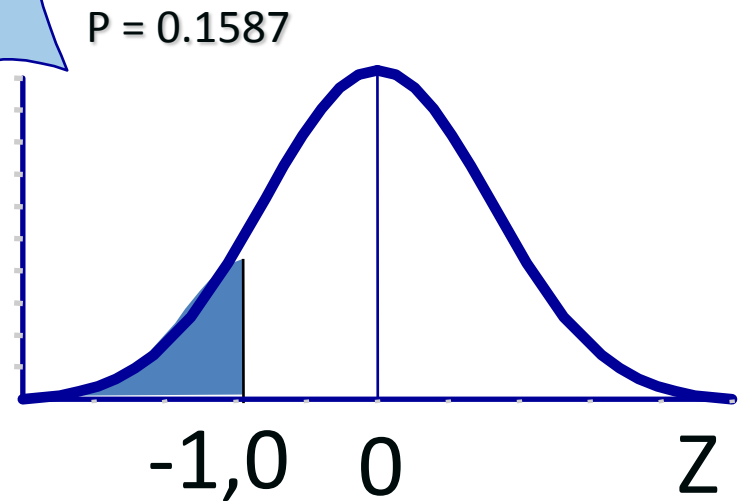
Gabarito

$$Z = \frac{X - T}{s} = \frac{22 - 25}{2,99} = -1,0$$

Distribuição Normal do Projeto

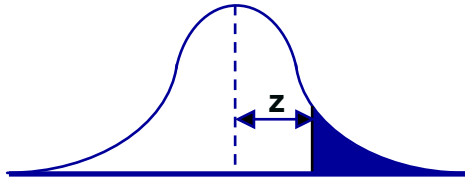


Normal Padrão



(HILLIER;LIEBERMAN;1988)

Tabela Normal “z”



Z	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	5.00E-01	4.96E-01	4.92E-01	4.88E-01	4.84E-01	4.80E-01	4.76E-01	4.72E-01	4.68E-01	4.64E-01
0.1	4.60E-01	4.56E-01	4.52E-01	4.48E-01	4.44E-01	4.40E-01	4.36E-01	4.33E-01	4.29E-01	4.25E-01
0.2	4.21E-01	4.17E-01	4.13E-01	4.09E-01	4.05E-01	4.01E-01	3.97E-01	3.94E-01	3.90E-01	3.86E-01
0.3	3.82E-01	3.78E-01	3.75E-01	3.71E-01	3.67E-01	3.63E-01	3.59E-01	3.56E-01	3.52E-01	3.48E-01
0.4	3.45E-01	3.41E-01	3.37E-01	3.34E-01	3.30E-01	3.26E-01	3.23E-01	3.19E-01	3.16E-01	3.12E-01
0.5	3.09E-01	3.05E-01	3.02E-01	2.98E-01	2.95E-01	2.91E-01	2.88E-01	2.84E-01	2.81E-01	2.78E-01
0.6	2.74E-01	2.71E-01	2.68E-01	2.64E-01	2.61E-01	2.58E-01	2.55E-01	2.51E-01	2.48E-01	2.45E-01
0.7	2.42E-01	2.39E-01	2.36E-01	2.33E-01	2.30E-01	2.27E-01	2.24E-01	2.21E-01	2.18E-01	2.15E-01
0.8	2.12E-01	2.09E-01	2.06E-01	2.03E-01	2.01E-01	1.98E-01	1.95E-01	1.92E-01	1.89E-01	1.87E-01
0.9	1.84E-01	1.81E-01	1.79E-01	1.76E-01	1.74E-01	1.71E-01	1.69E-01	1.66E-01	1.64E-01	1.61E-01
1.0	1.59E-01	1.56E-01	1.539E01	1.52E-01	1.49E-01	1.47E-01	1.45E-01	1.42E-01	1.40E-01	1.38E-01
1.1	1.36E-01	1.34E-01	1.31E-01	1.29E-01	1.27E-01	1.25E-01	1.23E-01	1.21E-01	1.19E-01	1.17E-01
1.2	1.15E-01	1.13E-01	1.11E-01	1.09E-01	1.08E-01	1.06E-01	1.04E-01	1.02E-01	1.00E-01	9.85E-02
1.3	9.68E-02	9.51E-02	9.34E-02	9.18E-02	9.01E-02	8.85E-02	8.69E-02	8.53E-02	8.38E-02	8.23E-02
1.4	8.08E-02	7.93E-02	7.78E-02	7.64E-02	7.49E-02	7.35E-02	7.21E-02	7.08E-02	6.94E-02	6.81E-02
1.5	6.68E-02	6.55E-02	6.43E-02	6.30E-02	6.18E-02	6.06E-02	5.94E-02	5.82E-02	5.71E-02	5.59E-02
1.6	5.48E-02	5.37E-02	5.26E-02	5.16E-02	5.05E-02	4.95E-02	4.85E-02	4.75E-02	4.65E-02	4.55E-02
1.7	4.46E-02	4.36E-02	4.27E-02	4.18E-02	4.09E-02	4.01E-02	3.92E-02	3.84E-02	3.75E-02	3.67E-02
1.8	3.59E-02	3.52E-02	3.44E-02	3.36E-02	3.29E-02	3.22E-02	3.14E-02	3.07E-02	3.01E-02	2.94E-02
1.9	2.87E-02	2.81E-02	2.74E-02	2.68E-02	2.62E-02	2.56E-02	2.50E-02	2.44E-02	2.39E-02	2.33E-02
2.0	2.28E-02	2.22E-02	2.17E-02	2.12E-02	2.07E-02	2.02E-02	1.97E-02	1.92E-02	1.88E-02	1.83E-02
2.1	1.79E-02	1.74E-02	1.70E-02	1.66E-02	1.62E-02	1.58E-02	1.54E-02	1.50E-02	1.46E-02	1.43E-02
2.2	1.39E-02	1.36E-02	1.32E-02	1.29E-02	1.26E-02	1.22E-02	1.19E-02	1.16E-02	1.13E-02	1.10E-02
2.3	1.07E-02	1.04E-02	1.02E-02	9.90E-03	9.64E-03	9.39E-03	9.14E-03	8.89E-03	8.66E-03	8.42E-03
2.4	8.20E-03	7.98E-03	7.76E-03	7.55E-03	7.34E-03	7.14E-03	6.95E-03	6.76E-03	6.57E-03	6.39E-03
2.5	6.21E-03	6.04E-03	5.87E-03	5.70E-03	5.54E-03	5.39E-03	5.23E-03	5.09E-03	4.94E-03	4.80E-03
2.6	4.66E-03	4.53E-03	4.40E-03	4.27E-03	4.15E-03	4.02E-03	3.91E-03	3.79E-03	3.68E-03	3.57E-03
2.7	3.47E-03	3.36E-03	3.26E-03	3.17E-03	3.07E-03	2.98E-03	2.89E-03	2.80E-03	2.72E-03	2.64E-03
2.8	2.56E-03	2.48E-03	2.40E-03	2.33E-03	2.26E-03	2.19E-03	2.12E-03	2.05E-03	1.99E-03	1.93E-03
2.9	1.87E-03	1.81E-03	1.75E-03	1.70E-03	1.64E-03	1.59E-03	1.54E-03	1.49E-03	1.44E-03	1.40E-03
3.0	1.35E-03	1.31E-03	1.26E-03	1.22E-03	1.18E-03	1.14E-03	1.11E-03	1.07E-03	1.04E-03	1.00E-03
3.1	9.68E-04	9.35E-04	9.04E-04	8.74E-04	8.45E-04	8.16E-04	7.89E-04	7.62E-04	7.36E-04	7.11E-04
3.2	6.87E-04	6.64E-04	6.41E-04	6.19E-04	5.98E-04	5.77E-04	5.57E-04	5.38E-04	5.19E-04	5.01E-04
3.3	4.84E-04	4.67E-04	4.50E-04	4.34E-04	4.19E-04	4.04E-04	3.90E-04	3.76E-04	3.63E-04	3.50E-04
3.4	3.37E-04	3.25E-04	3.13E-04	3.02E-04	2.91E-04	2.80E-04	2.70E-04	2.60E-04	2.51E-04	2.42E-04
3.5	2.33E-04	2.24E-04	2.16E-04	2.08E-04	2.00E-04	1.93E-04	1.86E-04	1.79E-04	1.72E-04	1.66E-04
3.6	1.59E-04	1.53E-04	1.47E-04	1.42E-04	1.36E-04	1.31E-04	1.26E-04	1.21E-04	1.17E-04	1.12E-04
3.7	1.08E-04	1.04E-04	9.97E-05	9.59E-05	9.21E-05	8.86E-05	8.51E-05	8.18E-05	7.85E-05	7.55E-05
3.8	7.25E-05	6.96E-05	6.69E-05	6.42E-05	6.17E-05	5.92E-05	5.68E-05	5.46E-05	5.24E-05	5.03E-05
3.9	4.82E-05	4.63E-05	4.44E-05	4.26E-05	4.09E-05	3.92E-05	3.76E-05	3.61E-05	3.46E-05	3.32E-05
4.0	3.18E-05	3.05E-05	2.92E-05	2.80E-05	2.68E-05	2.57E-05	2.47E-05	2.36E-05	2.26E-05	2.17E-05
4.1	2.08E-05	1.99E-05	1.91E-05	1.82E-05	1.75E-05	1.67E-05	1.60E-05	1.53E-05	1.47E-05	1.40E-05
4.2	1.34E-05	1.29E-05	1.23E-05	1.18E-05	1.13E-05	1.08E-05	1.03E-05	9.86E-06	9.43E-06	9.01E-06
4.3	8.62E-06	8.24E-06	7.88E-06	7.53E-06	7.20E-06	6.88E-06	6.57E-06	6.28E-06	6.00E-06	5.73E-06
4.4	5.48E-06	5.23E-06	5.00E-06	4.77E-06	4.56E-06	4.35E-06	4.16E-06	3.97E-06	3.79E-06	3.62E-06
4.5	3.45E-06	3.29E-06	3.14E-06	3.00E-06	2.86E-06	2.73E-06	2.60E-06	2.48E-06	2.37E-06	2.26E-06
4.6	2.15E-06	2.05E-06	1.96E-06	1.87E-06	1.78E-06	1.70E-06	1.62E-06	1.54E-06	1.47E-06	1.40E-06
4.7	1.33E-06	1.27E-06	1.21E-06	1.15E-06	1.10E-06	1.05E-06	9.96E-07	9.48E-07	9.03E-07	8.59E-07
4.8	8.18E-07	7.79E-07	7.41E-07	7.05E-07	6.71E-07	6.39E-07	6.08E-07	5.78E-07	5.50E-07	5.23E-07
4.9	4.98E-07	4.73E-07	4.50E-07	4.28E-07	4.07E-07	3.87E-07	3.68E-07	3.50E-07	3.32E-07	3.16E-07