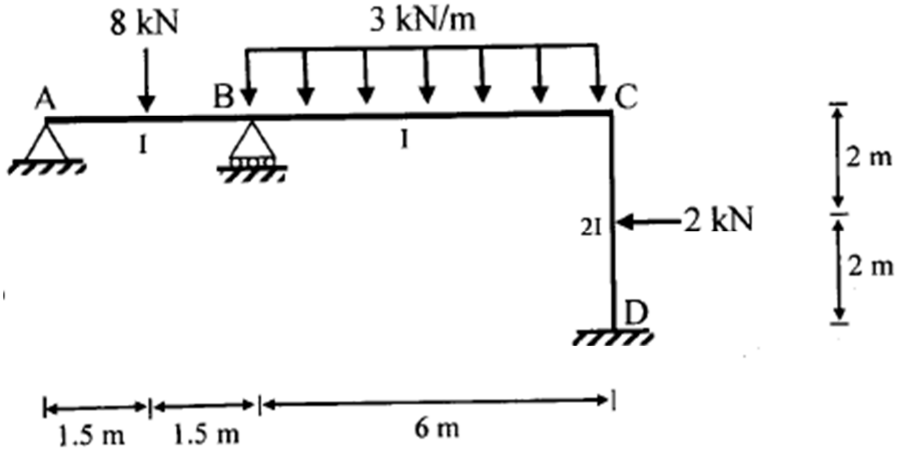
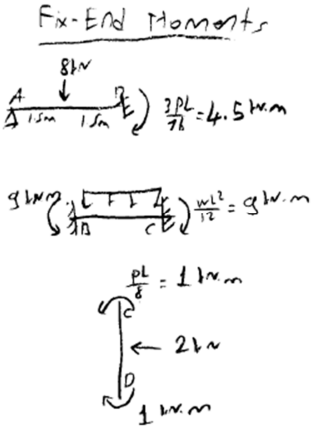
For the frame shown, determine the moments at member ends using the moment distribution method. E is constant for all members. Please conduct at least three iterations.



Fix-End Moments



Distribution factors

$k_{BA} = \frac{3EI}{3}$, $k_{BC} = \frac{4EI}{6}$

$k_{CB} = \frac{4EI}{6}$, $k_{CD} = \frac{4 \times 2EI}{4}$

$DF_{BA} = \frac{1}{1+2/3} = 0.6$

$DF_{BC} = 1 - 0.6 = 0.4$

$DF_{CB} = \frac{2/3}{2/3+2} = 0.25$

$DF_{CD} = 1 - 0.25 = 0.75$

$DF_{AB} = 1$ (pin support)

$DF_{DC} = 0$ (fix support)

	A 1	0.6 B 0.4	0.25 C 0.75	D
	-4.5	9 -9	1	-1
	-2.7	-1.8 2	6	0
		1 -0.9		3
	-0.6	-0.4 0.225	0.675	0
		0.113 -0.2		0.338
	-0.068	-0.045 0.05	0.15	0
		0.025 -0.02		0.075
±	-0.015	-0.01 0.006	0.017	0
	-7.88	7.88 -7.84	7.84	2.41