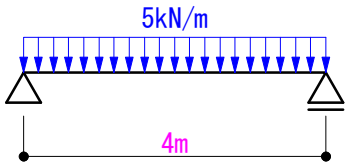
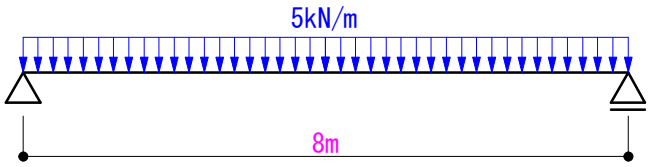
■問題　図のように荷重を受ける単純梁の曲げモーメント図、せん断力図、たわみ角、たわみを求めよ。
ただし、ヤング係数(I)は20590kN/cm^2、断面二次モーメント(I)は1580cm^4とする。

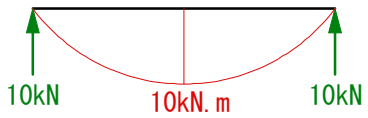




・単純梁の応力算定

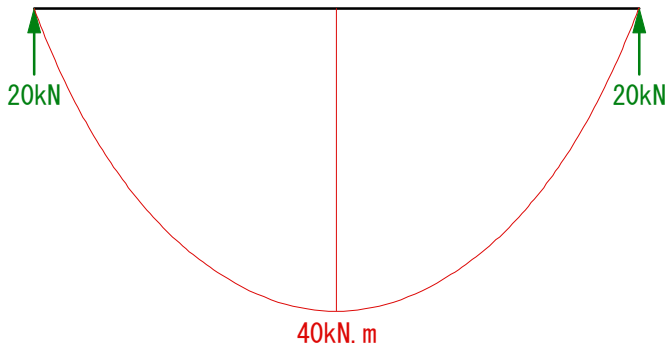
■解説

▼曲げモーメント



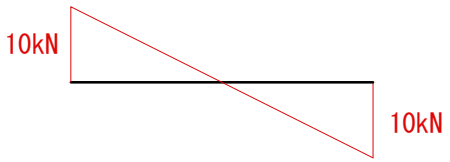
答え　M = 10kN.m

▼曲げモーメント



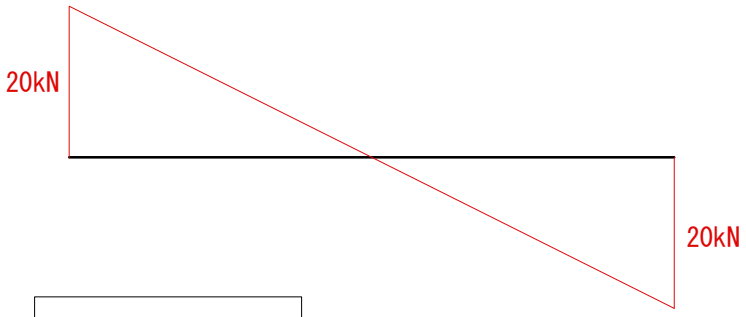
答え　M = 40kN.m

▼せん断力



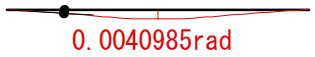
答え　Q = 10kN

▼せん断力



答え　Q = 20kN

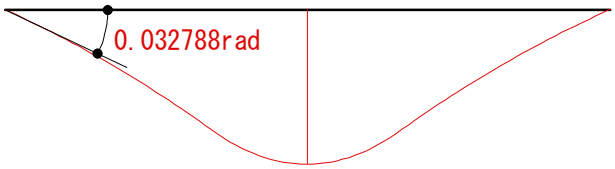
▼たわみ角



θ = W.L^3 / 24.E.I
= 0.05*400^3 / 24*20590*1580
= 0.0040985rad

答え　θ = 0.0040985rad

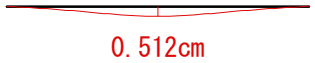
▼たわみ角



θ = W.L^3 / 24.E.I
= 0.05*800^3 / 24*20590*1580
= 0.032788rad

答え　θ = 0.032788rad

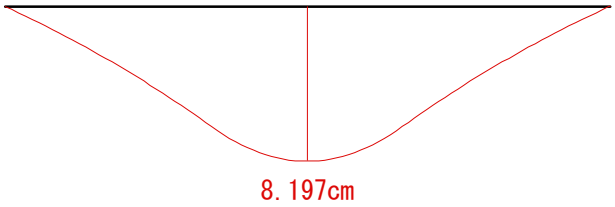
▼たわみ



δ = 5.W.L^4 / 384.E.I
= 5*0.05*400^4 / 384*20590*1580
= 0.512cm

答え　δ = 0.512cm

▼たわみ



δ = 5.W.L^4 / 384.E.I
= 5*0.05*800^4 / 384*20590*1580
= 8.1970cm

答え　δ = 8.1970cm