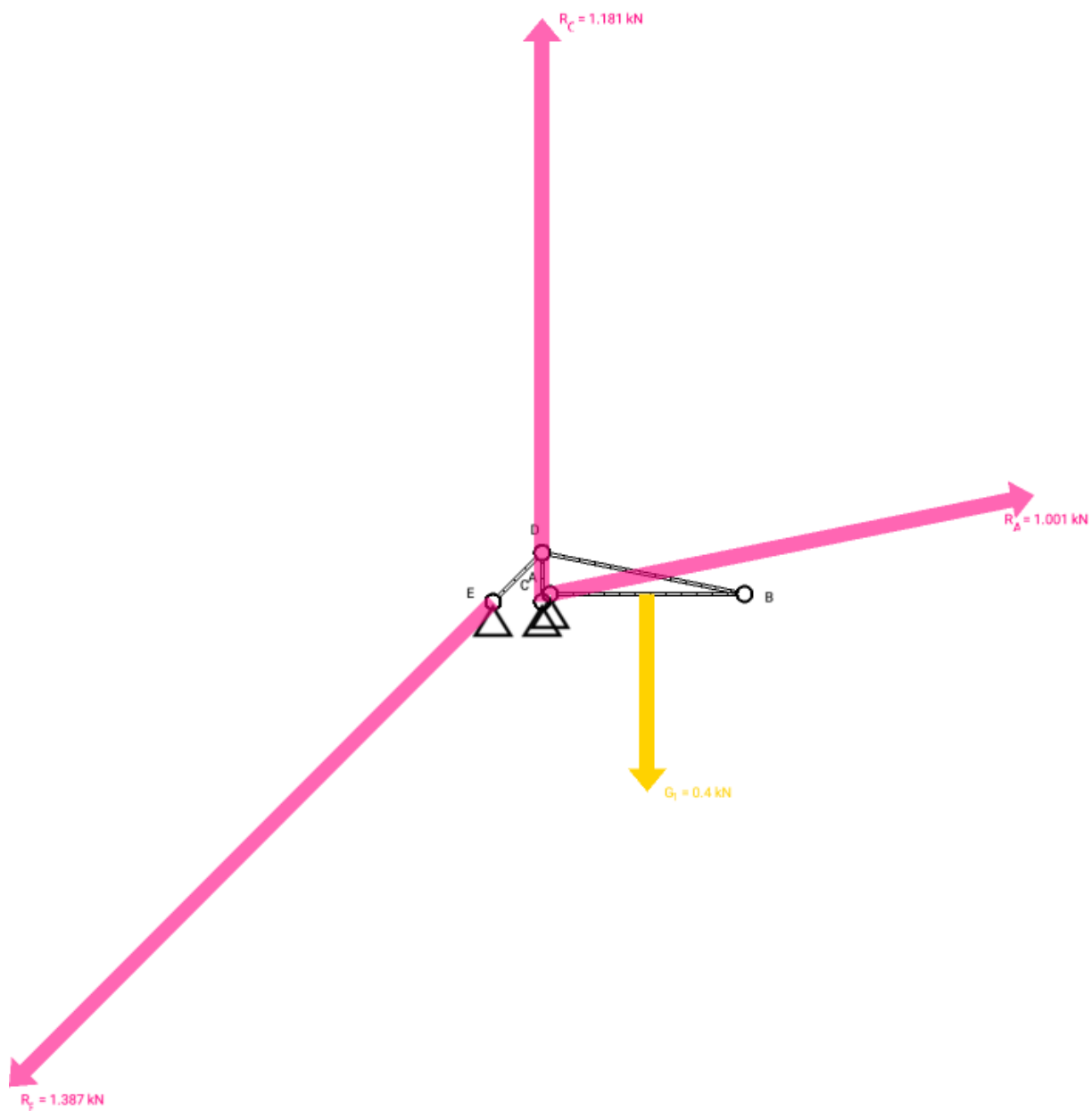


AUTODESK® FORCEEFFECT™



Inputs:




Elements

Element	Length	Weight
A-B	9.900 m	0.400 kN
C-D	2.500 m	
D-E	3.536 m	

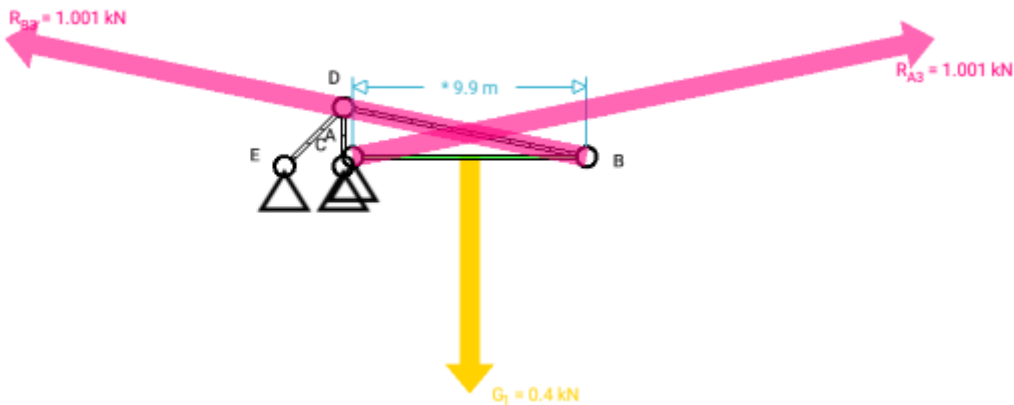
Element	Length	Weight
D-B	10.512 m	

Results:

Reaction Forces

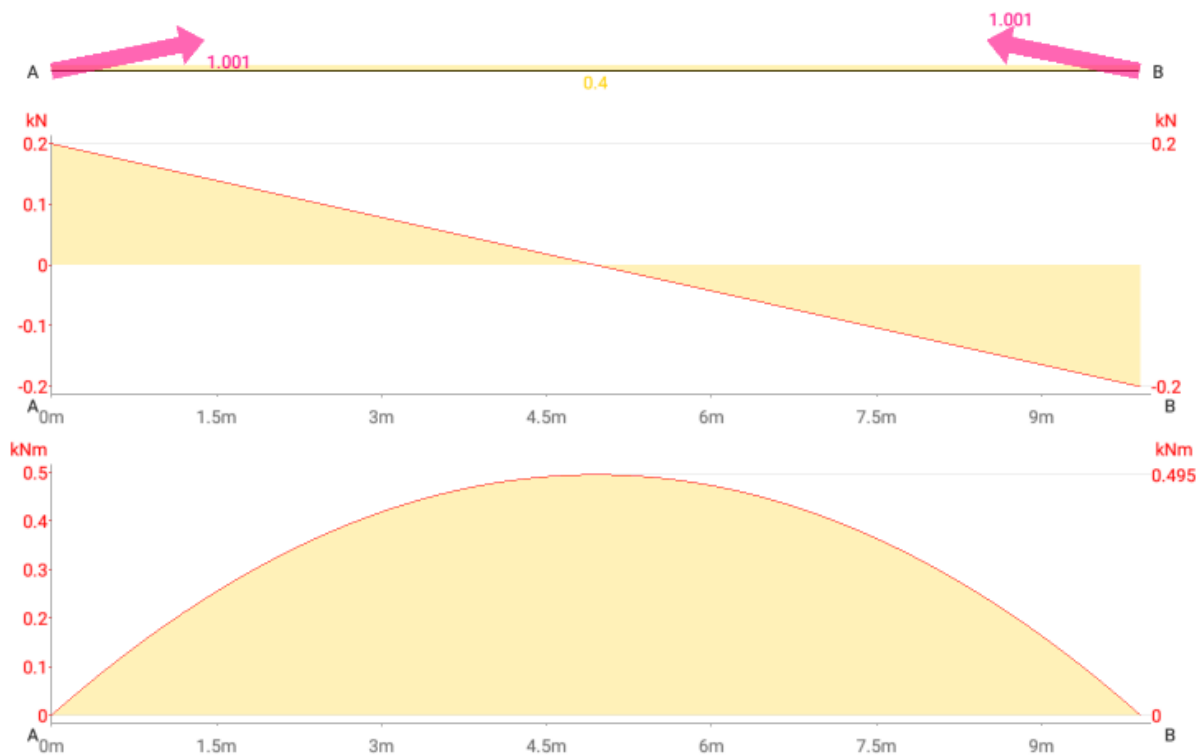
Force	Direction	Size	Angle
R _A		1.001 kN	11.5°
R _C		1.181 kN	90.0°
R _E		1.387 kN	225.0°

Element A-B

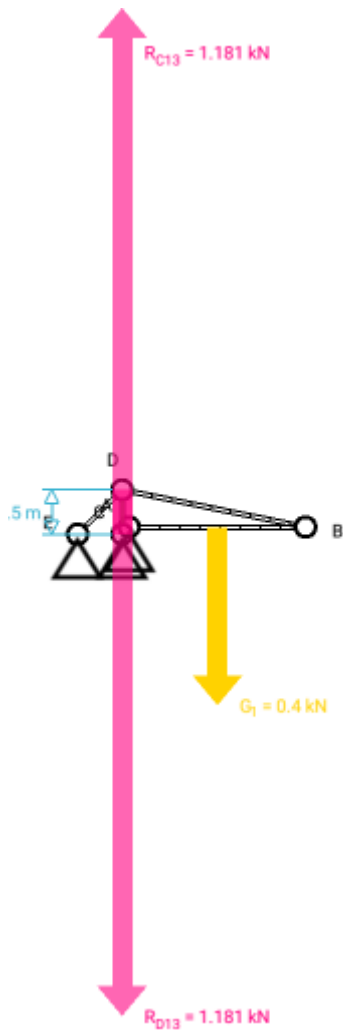


Equations	Results
$\sum M = 0 \Rightarrow 9.900 \times R_{B3[Y]} + 0.000 \times R_{B3[X]} = -G_1 \times 4.950$	$R_{A3[X]} = 0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{A3[X]} + R_{B3[X]} = 0$	$R_{A3[Y]} = 0.200 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{A3[Y]} + R_{B3[Y]} = -G_1$	$R_{B22[X]} = 0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{A[X]} - R_{A3[X]} = 0$	$R_{B22[Y]} = -0.200 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{A[Y]} - R_{A3[Y]} = 0$	$R_{B3[X]} = -0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow -R_{B3[X]} - R_{B22[X]} = 0$	$R_{B3[Y]} = 0.200 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow -R_{B3[Y]} - R_{B22[Y]} = 0$	

Shear Force and Moment Diagram

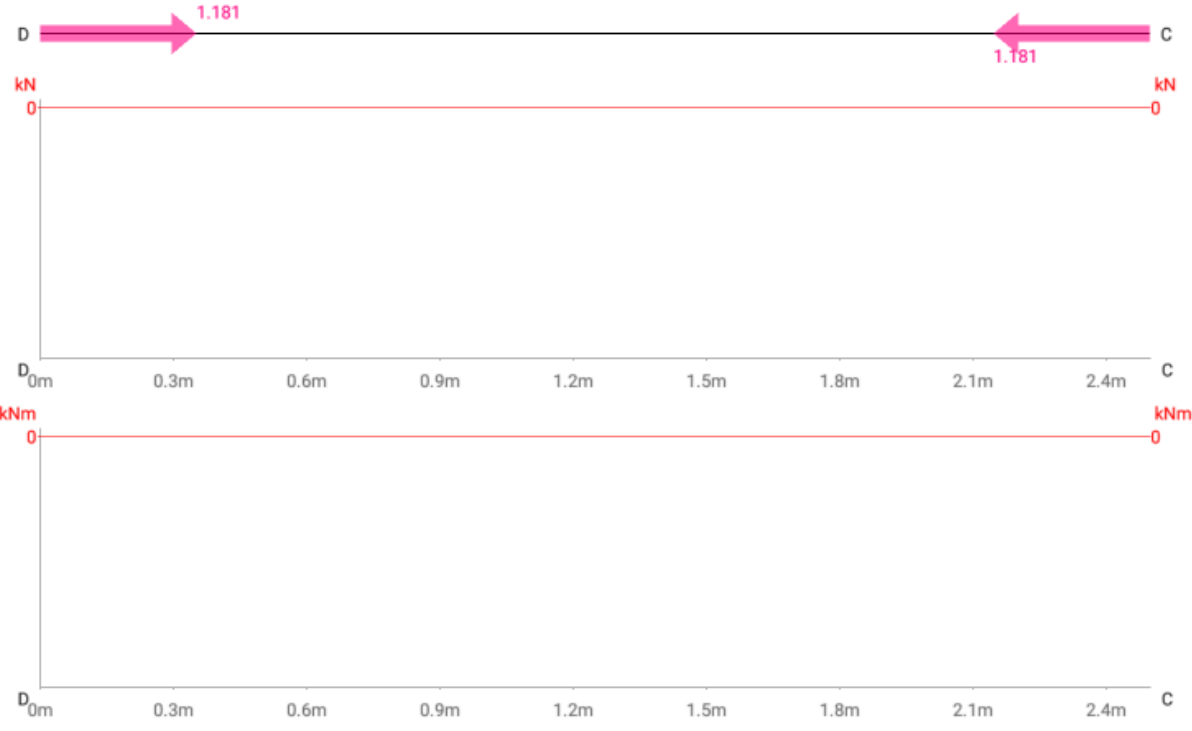


Element C-D

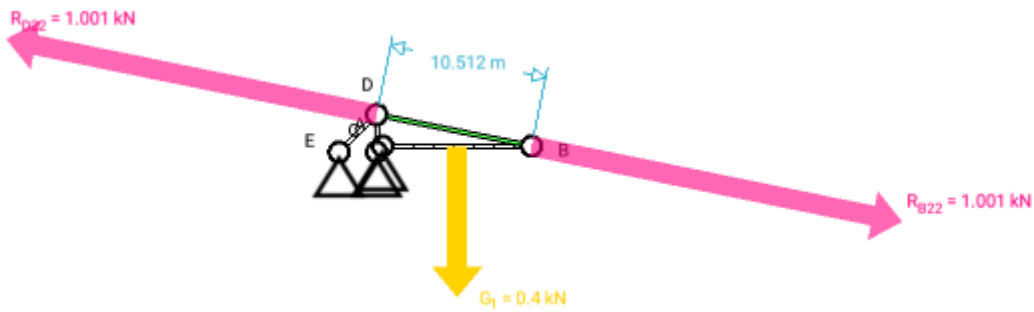


Equations	Results
$\sum M = 0 \Rightarrow -2.500 \times R_{D13[X]} = 0$	$R_{C13[X]} = 0.000 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{C13[X]} + R_{D13[X]} = 0$	$R_{C13[Y]} = 1.181 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{C13[Y]} + R_{D13[Y]} = 0$	$R_{D13[X]} = -0.000 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{C[X]} - R_{C13[X]} = 0$	$R_{D13[Y]} = -1.181 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{C[Y]} - R_{C13[Y]} = 0$	$R_{D17[X]} = 0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow -R_{D13[X]} - R_{D17[X]} - R_{D22[X]} = 0$	$R_{D17[Y]} = 0.981 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow -R_{D13[Y]} - R_{D17[Y]} - R_{D22[Y]} = 0$	$R_{D22[X]} = -0.981 \text{ kN}$
	$R_{D22[Y]} = 0.200 \text{ kN}$

Shear Force and Moment Diagram



Element D-B

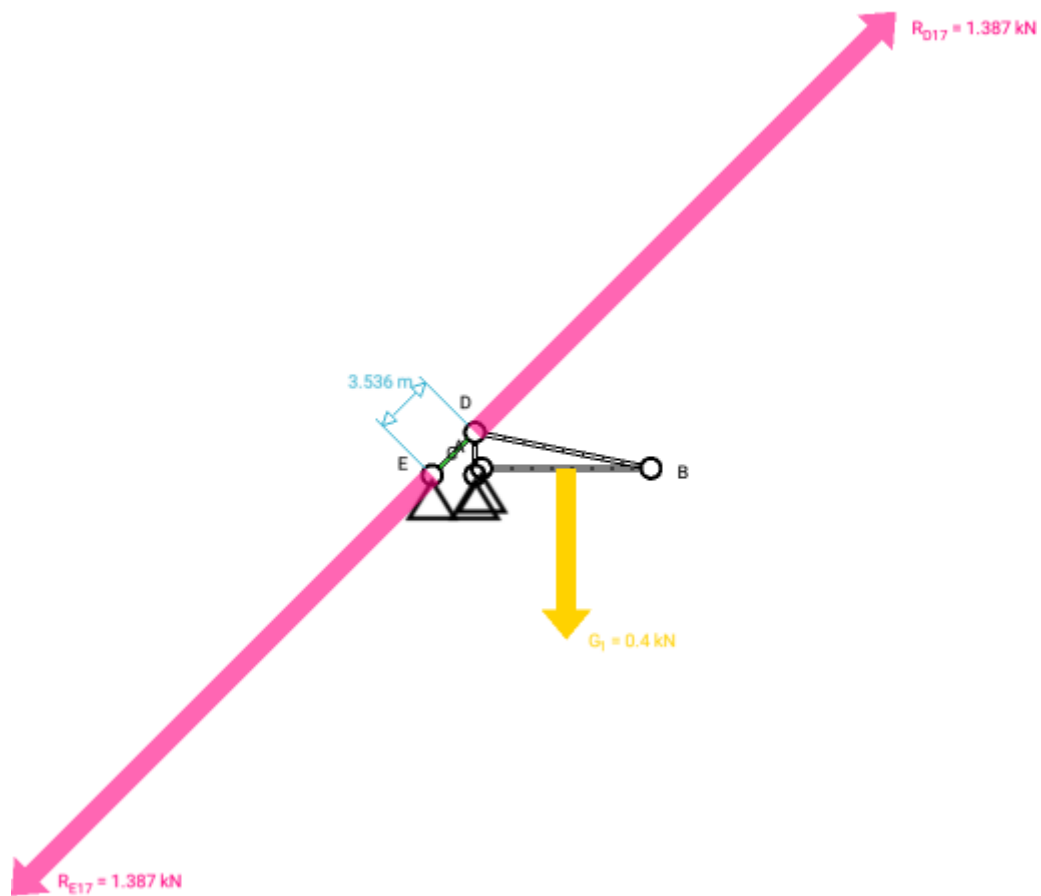


Equations	Results
$\sum M = 0 \Rightarrow 10.300 \times R_{B22[Y]} + 2.100 \times R_{B22[X]} = 0$	$R_{D13[X]} = -0.000 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{D22[X]} + R_{B22[X]} = 0$	$R_{D13[Y]} = -1.181 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{D22[Y]} + R_{B22[Y]} = 0$	$R_{D17[X]} = 0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow -R_{D13[X]} - R_{D17[X]} - R_{D22[X]} = 0$	$R_{D17[Y]} = 0.981 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow -R_{D13[Y]} - R_{D17[Y]} - R_{D22[Y]} = 0$	$R_{D22[X]} = -0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow -R_{B3[X]} - R_{B22[X]} = 0$	$R_{D22[Y]} = 0.200 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow -R_{B3[Y]} - R_{B22[Y]} = 0$	$R_{B22[X]} = 0.981 \text{ kN}$
	$R_{B22[Y]} = -0.200 \text{ kN}$
	$R_{B3[X]} = -0.981 \text{ kN}$
	$R_{B3[Y]} = 0.200 \text{ kN}$

Shear Force and Moment Diagram



Element D-E



Equations	Results
$\sum M = 0 \Rightarrow -2.500 \times R_{E17[Y]} + 2.500 \times R_{E17[X]} = 0$	$R_{D13[X]} = -0.000 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{D17[X]} + R_{E17[X]} = 0$	$R_{D13[Y]} = -1.181 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{D17[Y]} + R_{E17[Y]} = 0$	$R_{D17[X]} = 0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow -R_{D13[X]} - R_{D17[X]} - R_{D22[X]} = 0$	$R_{D17[Y]} = 0.981 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow -R_{D13[Y]} - R_{D17[Y]} - R_{D22[Y]} = 0$	$R_{D22[X]} = -0.981 \text{ kN}$
$\sum F_{[X]} = 0 \Rightarrow R_{E[X]} - R_{E17[X]} = 0$	$R_{D22[Y]} = 0.200 \text{ kN}$
$\sum F_{[Y]} = 0 \Rightarrow R_{E[Y]} - R_{E17[Y]} = 0$	$R_{E17[X]} = -0.981 \text{ kN}$
	$R_{E17[Y]} = -0.981 \text{ kN}$

Shear Force and Moment Diagram

