

Supports & Reactions

Mechanical Engineering

What each support blocks, and how many unknowns it adds to the problem.

Unknown count is for plane problems unless marked.

Support	Blocks	Unknowns
Roller	Motion normal to the surface	1
Pin or hinge	Motion in both directions	2
Fixed or built-in	Both motions and rotation	3
Cable	Motion along the cable	1
Smooth contact	Motion into the surface	1
Ball and socket, 3D	All three translations	3

A cable pulls only; it can never push. If your answer puts a cable in compression, it is slack.