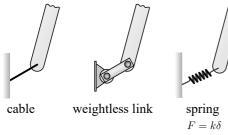
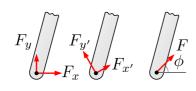
Normal supports One unknown surface, rod, or slot resists perpendicular translation smooth pin smooth roller rocker force perpendicular to surface collar on or roller surface, rod, or slot smooth rod in slot Two-force member supports One unknown cable, link, or spring resists translation, resulting in tension or compression



Pin support — Two unknowns pin resists translation in both directions



frictionless pin or hinge



two rectangular components or force at unknown angle

Rough surface—Two unknowns

resists translation along and perpendicular to surface



body contacting rough surface



friction and normal components or friction resultant in unknown direction



 $F_{tension}$



tension or compression force in line with two-force member

Fixed collar Two unknowns on smooth rod

rod resists perpendicular translation and rotation



collar slides but cannot rotate in plane of page



normal force and reaction moment

Fixed support —Three unknowns resists translation and rotation







two force components and reaction moment.