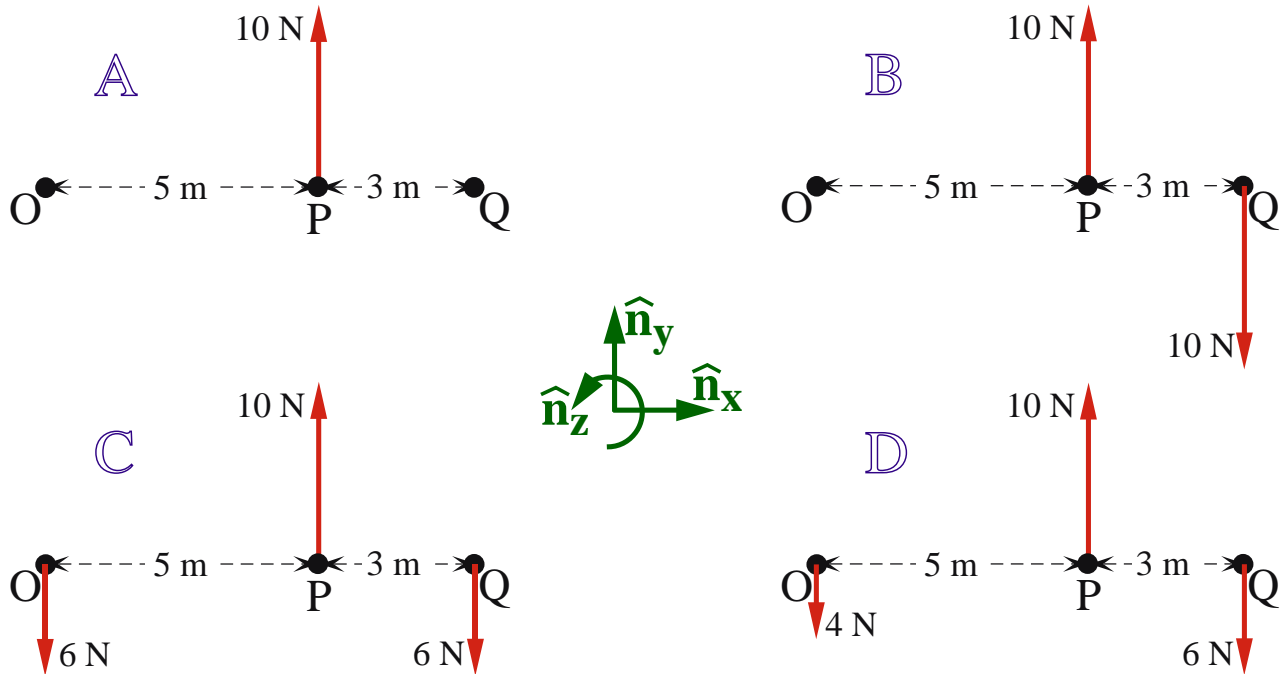


13.2 Moment vs. torque (refer to Section 17.5.1)

Consider the various sets S of forces, their resultants \vec{F}^S , and moments about points O , P , and Q . This example shows how to easily determine whether a moment is a torque.¹

S	\vec{F}^S	$\vec{M}^{S/O}$	$\vec{M}^{S/P}$	$\vec{M}^{S/Q}$	$\vec{M}^{S/O} \stackrel{?}{=} \vec{M}^{S/P} \stackrel{?}{=} \vec{M}^{S/Q}$	Moment is torque?
A	$10 \hat{n}_y$	$50 \hat{n}_z$	$\vec{0}$	$-30 \hat{n}_z$	Yes/ No	Yes/ No
B	$\vec{0}$	$-30 \hat{n}_z$	$-30 \hat{n}_z$	$-30 \hat{n}_z$	Yes /No	Yes /No
C	$-2 \hat{n}_y$	$2 \hat{n}_z$	$12 \hat{n}_z$	$18 \hat{n}_z$	Yes/ No	Yes/ No
D	$\vec{0}$	$2 \hat{n}_z$	$2 \hat{n}_z$	$2 \hat{n}_z$	Yes /No	Yes /No



¹Since $\vec{T}^S \triangleq \vec{M}^{S/O}$ if $\vec{F}^S = \vec{0}$ (point O is *any* point), the *moment* is a *torque* if $\vec{F}^S = \vec{0}$ (it is that simple).