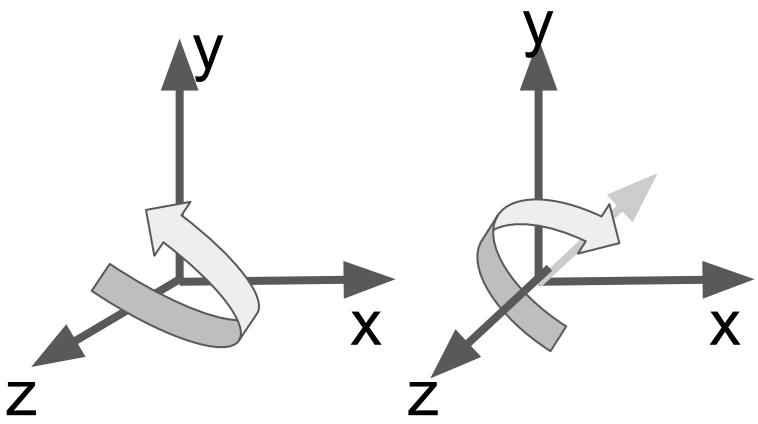
Additional Slides: Sign convention
Cross Products - Application: Moments

Coordinate System

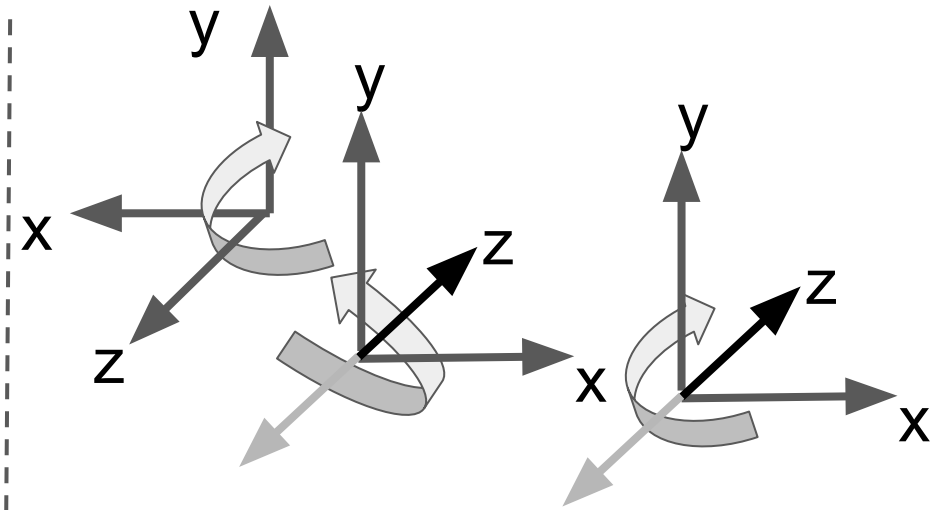


$$r \times F = -F \times r$$

i x j = k
j x k = i
k x i = j

j x i = -k
k x j = -i
i x k = j

Representation of Right Hand Rule



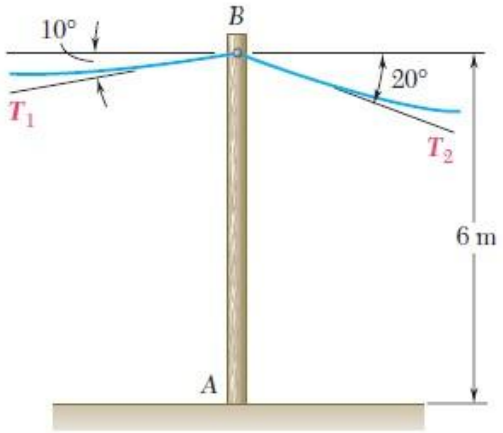
$$r \times F = -F \times r$$

i x j = k
j x k = i
k x i = j

j x i = -k
k x j = -i
i x k = j

Representation of Left Hand Rule

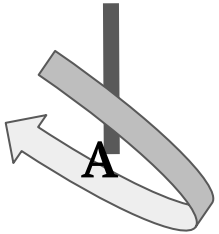
Example: Moment at A



W = 1600 N,
T1 = 600 N,
T2 = 375 N

$$M_a + [600\cos(10°) - 375\cos(20°)]\,6 = 0$$

$$M_a = -1431\text{N m}$$



Representation of Right Hand Rule

$$M_a + [600\cos(10°) - 375\cos(20°)]\,6 = 0$$

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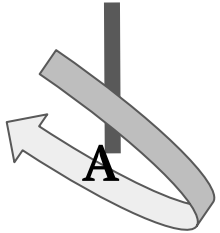

Representation of Left Hand Rule