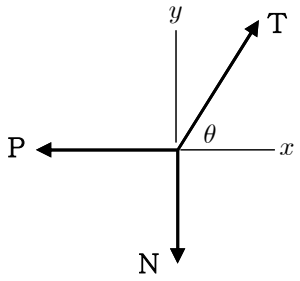
[2.3절]

2.63 W = 200 N, h = 400 mm, 줄의 장력은 동일 $T = W$, $\theta = \tan^{-1}\dfrac{h}{x}$

S; known W, T, h, x, unknown P M;



질점의 평형 문제 ⇒ 직각성분 방법 또는 힘 삼각형 방법

A;

<방법 1 : 직각성분>

$\Sigma F_x = 0$; $-P + T\cos\theta = 0$ ⇒ $P = T\cos\theta$

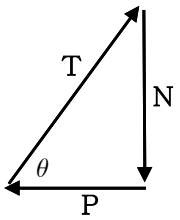
(a) x = 90 mm, $\theta = \tan^{-1}\dfrac{400\text{ mm}}{90\text{ mm}} = 77.3°$

P = (200 N) cos77.3° = 43.90 N ⇒ P = 43.9 N

(b) x = 300 mm, $\theta = \tan^{-1}\dfrac{400\text{ mm}}{300\text{ mm}} = \tan^{-1}\dfrac{4}{3}$

$P = (200\text{ N})\dfrac{3}{5} = 120\text{ N}$ ⇒ P = 120.0 N

<방법 2 : 힘 삼각형>



$P = T\cos\theta$

(a) x = 90 mm, $\theta = \tan^{-1}\dfrac{400\text{ mm}}{90\text{ mm}} = 77.3°$

P = (200 N) cos77.3° = 43.90 N ⇒ P = 43.9 N

(b) x = 300 mm, $\theta = \tan^{-1}\dfrac{400\text{ mm}}{300\text{ mm}} = \tan^{-1}\dfrac{4}{3}$

$P = (200\text{ N})\dfrac{3}{5} = 120\text{ N}$ ⇒ P = 120.0 N

R; 과정의 타당성 (가령, 두 가지 방법 비교)

T; 결과 검토 (가령, x값에 따른 차이)