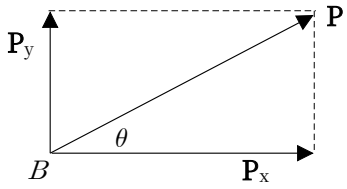
{2.7~8절}

2.25 [힘의 직각성분]



P_y = 960 N, θ = 35°

(a) $P_y = P \sin\theta$

$\Rightarrow \quad P = \dfrac{P_y}{\sin\theta} = \dfrac{960\ \text{N}}{\sin 35^\circ} = 1673.7\ \text{N} \quad \Rightarrow \quad P = 1674\ \text{N}$

(b) <방법 1>

$P_x = P\cos\theta = (1673.7\ \text{N})\cos 35^\circ = 1371.0\ \text{N}$

<방법 2 : 더 좋은 방법>

$\tan\theta = \dfrac{P_y}{P_x} \quad \Rightarrow \quad P_x = \dfrac{P_y}{\tan\theta} = \dfrac{960\ \text{N}}{\tan 35^\circ} = 1371.0\ \text{N} \quad \Rightarrow \quad P_x = 1371\ \text{N}$

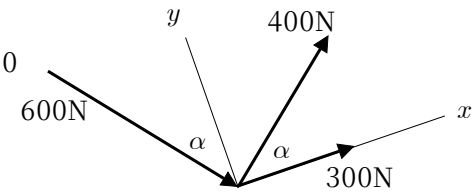
2.41 [직각성분 힘의 합성]

(a) $R_y = 0$

$R_y = \Sigma F_y = (400\ \text{N})\sin\alpha - (600\ \text{N})\cos\alpha = 0$

$\Rightarrow \quad \tan\alpha = \dfrac{600\ \text{N}}{400\ \text{N}} = 1.5$

$\Rightarrow \quad \alpha = \tan^{-1}(1.5) = 56.3^\circ$



(b) $R_x = \Sigma F_x = (300\ \text{N}) + (400\ \text{N})\cos\alpha + (600\ \text{N})\sin\alpha$

$= (300\ \text{N}) + (400\ \text{N})\cos 56.3^\circ + (600\ \text{N})\sin 56.3^\circ = 1021.1\ \text{N}$

$R = \sqrt{R_x^2 + R_y^2} = \sqrt{0 + R_y^2} = R_y = 1021.1\ \text{N} \quad \Rightarrow \quad R = 1021\ \text{N}$