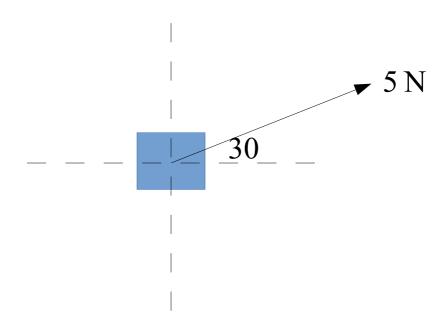# Dynamics

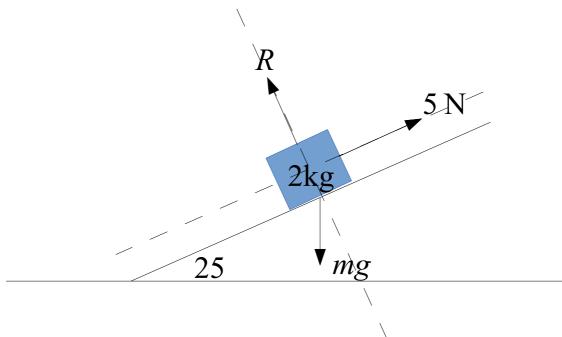## F = ma
The resultant force is equal to mass times acceleration

We often need to split a force into horizontal and vertical components:

$$\text{Force acting horizontally} = 5\cos(30)$$
$$\text{Force acting vertically} = 5\sin(30)$$

Dynamics

Perpendicular to the Plane:
$$R = 2g\cos(25)$$
$$R = 17.76\,N\,(2dp)$$

Parallel to the Plane:
$$F = ma$$
$$2g\sin(25) - 5 = 2a$$
$$a = 1.64\,ms^{-1}\,(2dp)$$

$$Friction_{MAX} = \mu R$$
μ is the coefficient of friction
$$0 < \mu < 1$$