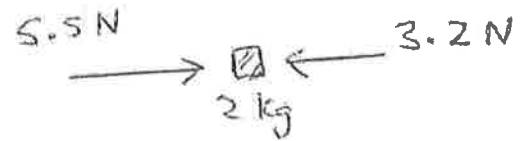


Examples on Resolution of Forces :

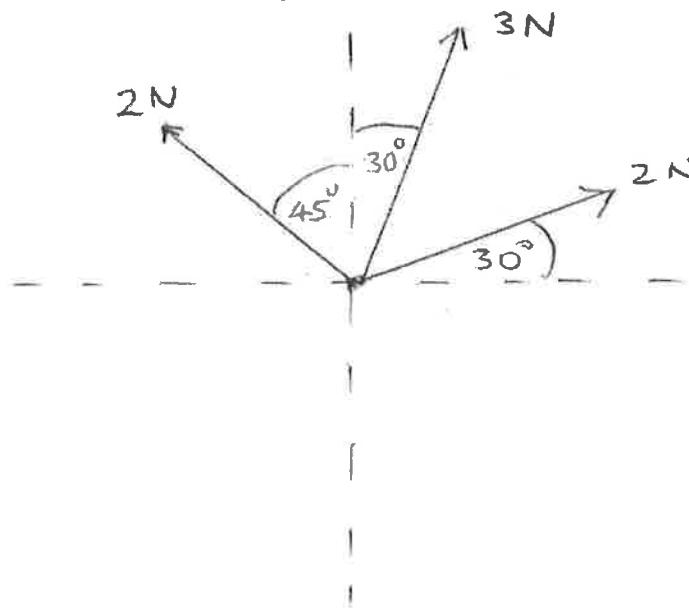
1. Two forces act on a body of mass 2 kg .

Find

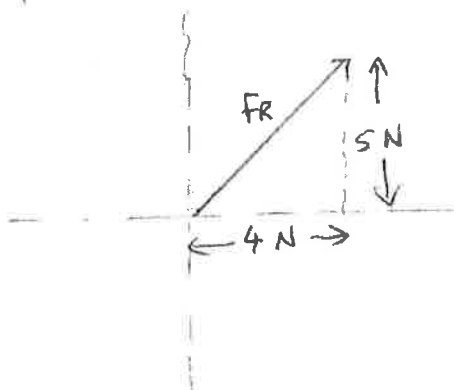
- (i) Resultant force
- (ii) Acceleration of body.



2. Find the resultant force (magnitude and direction) for the following system:

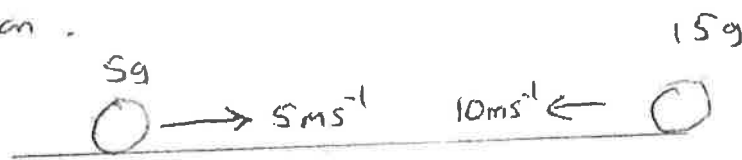


3. A force F_R has horizontal & vertical components as shown in Figure. (i) Calculate the angle that the force makes with respect to x axis (ii) Calculate F_R



Collisions Examples

4. A ball of mass 20 g hits a stationary ball of mass 40 g at a velocity of 10 ms^{-1} , perfectly elastically. Determine the velocity of each ball after collision.
5. Two balls collide in a perfect elastic collision. Determine the velocity of each ball after collision.



Energy Conservation Examples

6. A ball of mass 0.3 kg is dropped from a height of 2.5 m onto the ground. Calculate ~~the~~ (i) The speed at moment of impact on the ground
(ii) The speed after impact if the coefficient of restitution is 0.7
7. A projectile of mass 30 g hits a target at 600 ms^{-1} . If the depth of penetration is 30 cm determine the average resistive force.

Examples on Stress-Strain

8. A wire of length 1.5 m undergoes a strain of 0.1 . What is the extension?

9. A wire of cross-sectional area 0.3 cm^2 and natural length 2 m has a mass of 100 kg suspended from one end. Calculate:

~~11~~ The strain if the Modulus of Elasticity is $50 \times 10^9 \text{ Pa}$

10. A wire of length 3 m experiences a tensile stress of $20 \times 10^6 \text{ Pa}$. If the resulting strain is 0.2 determine Young's Modulus of elasticity.