

YAKEEN NEET 2.0

2026

Laws of motion

PHYSICS

Lecture - 01

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Todays Goal

- NLM, force
- Newton Law of motion.

Circular motion Hum NLM + friction ke bad padhenge

in KOTA sequence // JEE seq // Saleem Bhaiya seq.

(Circular motion kinematics + Circular motion dynamics) = Together .

Inertia → It is tendency to resist the change.

- Property due which a body stays in state of rest or in uniform motion
(const velocity = st-line path).

→ (bike start suddenly accelerate)

Inertia of rest → Rest par hi to rest par hi Rahna chahiye

Inertia of motion → motion .. motion me hi (const velocity)

Inertia of dirⁿ → Pahado wali kahan,

↳ (hill station)

↳ (Bus break suddenly)

Measurement of inertia

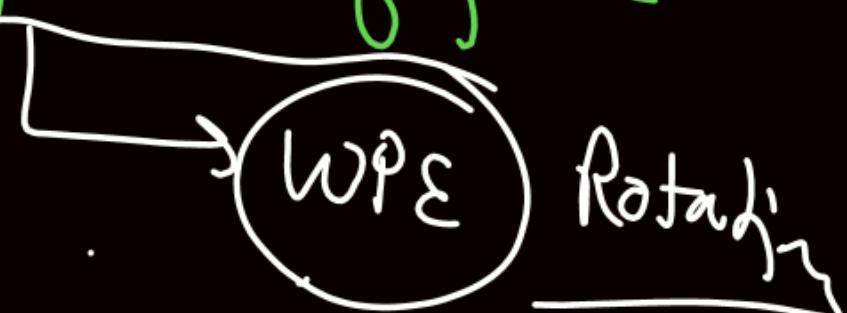
→ mass

* Momentum \rightarrow Amount of motion contain in a system.

$$\vec{P} = m \vec{v} \quad , \quad \boxed{\vec{P} = m \vec{v}_{\text{com}}}$$

* Force \rightarrow Push or pull.

Force ki full information ke liye . . . We must know
magnitude, direction, point of application of force.



a Newton 1st Law.

- If a body is at rest , it want to be in rest until an ^{net} external force act on it .
 - If a body is in motion, it want to move with const velocity in a straight line path until net external force (push-pull) act on it
- * Body continue to be in same state of rest or of in Uniform motion of st-line until or unless a push or pull act on it .

Newton 2nd Law

- Rate of change of momentum is equal to net external force acting on body.

$$(\vec{F}_{\text{net}})_{\text{ext}} = \frac{d\vec{P}}{dt}$$

$$(\vec{F}_{\text{net}})_{\text{ext}} = \frac{d(m\vec{v})}{dt} = m \frac{d\vec{v}}{dt} + \vec{v} \frac{dm}{dt}$$

If $m \rightarrow \text{const}$

$$(\vec{F}_{\text{net}})_{\text{ext}} = m \frac{d\vec{v}}{dt} + \vec{v} \frac{dm}{dt}$$

$$(\vec{F}_{\text{net}})_{\text{ext}} = m\vec{a}$$

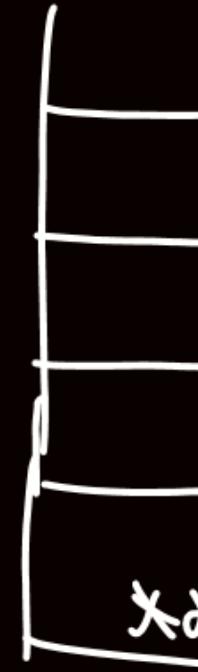
{ SKC
- rocket propulsion
H $\vec{F} = m\vec{a}$
mat lagr deng.
** Beast mode
...
L: \vec{F}

$$F = ma \times$$

Newton third law

{ SKC *
A Ne 'B' Par force Lagaya F' to
B Bhi A par force Lagayega F.

- For an action there will be equal & opposite reaction. (A/R)
- Action & reaction must have

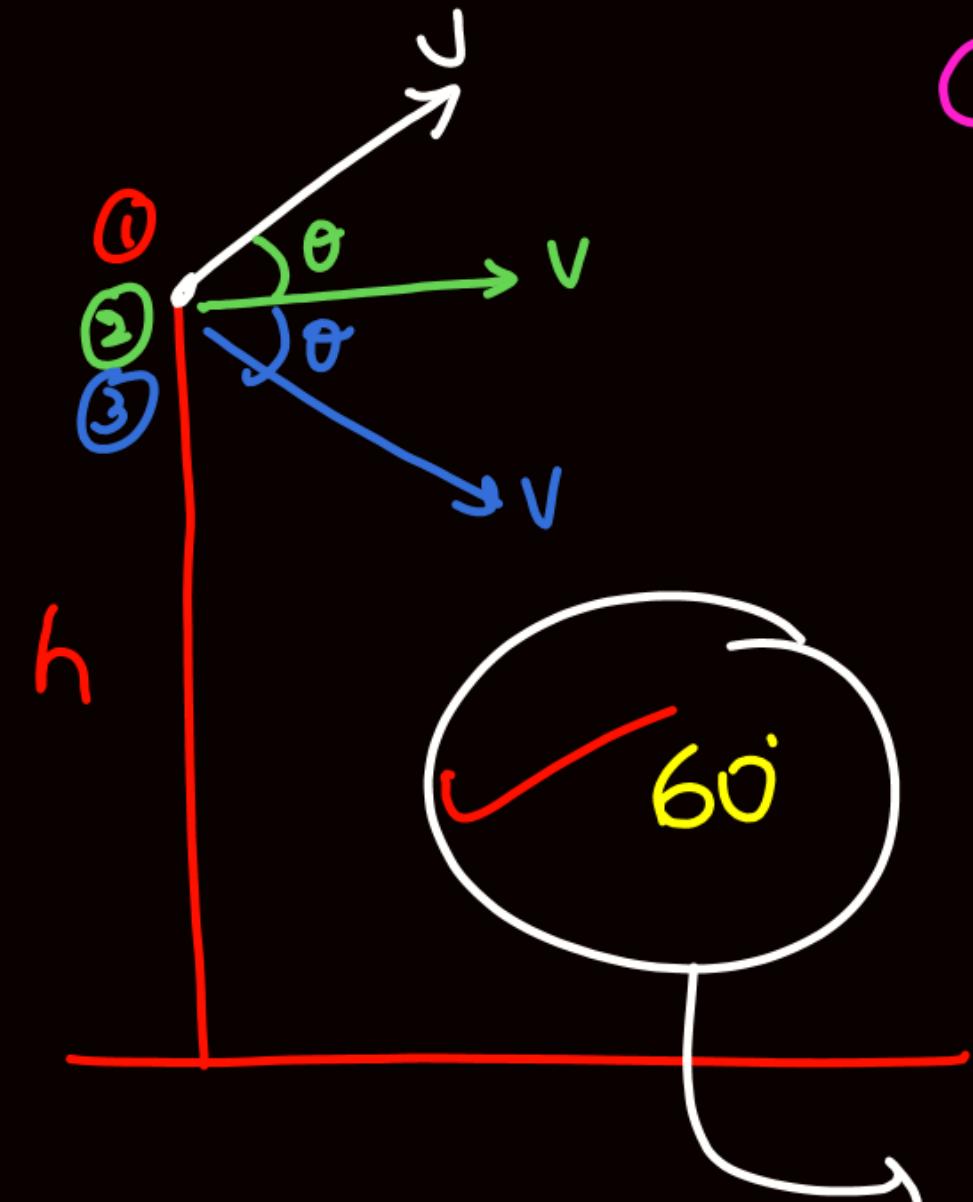
 → Same magnitude , dir' opposite
→ Act simultaneously
→ Same nature .
→ It is two body event.
XX → Koi action hai or koi reaktion ye Nahi bata Sakte.

Types of force

Four fundamental nature of force

- ✓ ① Gravitational force ($mg, \frac{Gm_1m_2}{r^2}, \dots$)
- ✓ ② Electromagnetic force ($N, S, \text{electrost. force, magnetic force} \dots$)
- ✗ { ③ weak nuclear force
- ④ strong nuclear force

Hm
② find ratio of
angle of distance
b/w ① & ③



①② के बीच की Distance
const. rate से change हुई से
change होती है
Rate of change of distance
• b/w ① & ②
are u

find ① θ

So many student answered this
correctly and they gave proper
explanation of it.

~~Ques~~ 20. A person decided to walk on an escalator which is moving at constant rate (speed). When he moves at the rate 1 step/sec, then he reaches top in 20 steps. Next day he goes 2 steps / sec. and reaches top in 32 steps. If speed of escalator is n steps / sec. Find the value of n.

एक व्यक्ति नियत दर (चाल) से गतिशील चलायमान सीढ़ी (escalator) पर पैदल चलने का निर्णय करता है। जब वह 1 सीढ़ी/सेकण्ड की दर से गति करता है तो वह 20 सीढ़ियां चढ़कर ऊपर पहुंच जाता है। अगले दिन वह 2 सीढ़ी/सेकण्ड चलता है तो वह 32 सीढ़ियां चढ़कर ऊपर पहुंच जाता है। यदि escalator की चाल n सीढ़ी / सेकण्ड हो तो n का मान ज्ञात कीजिए। *will discuss next class* $t_1 = 20\text{sec}$

Ans. 3

Sol

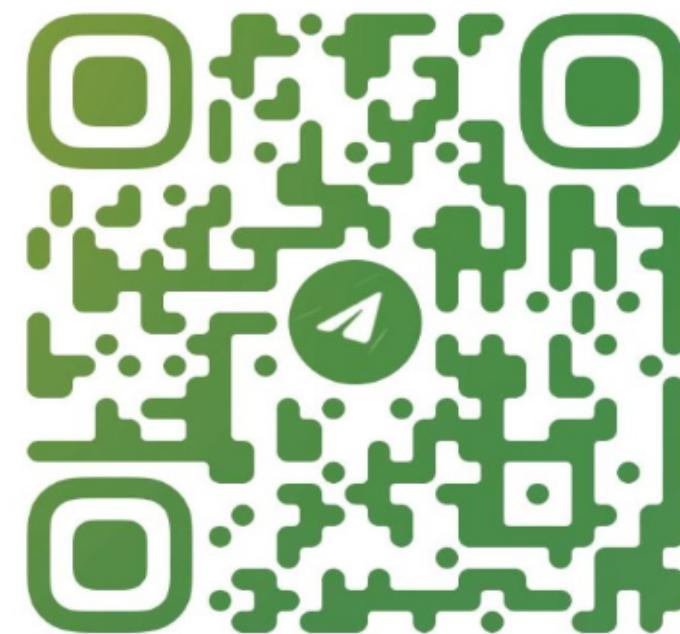
$$(n+1) \times 20 = l$$

$$(n+2) \times 16 = l \quad \textcircled{b}$$

$$\frac{(n+1) \times 20}{(n+2) \times 16} = 1$$

$$\frac{l}{n}$$

Sol



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Home work

- Complete kinematics backlog if you have
- Abhi i am travelling (motion)
So kpp will glue you after (1-2) days
so till then do revision of vectors + kinematics

**THANK
YOU**