38 Lecture - MTH101

Important Subjective

What is the formula for work when the force applied is not constant?

Answer: The formula for work when the force applied is not constant is W = ?[a,b] F(x)dx, where F(x) is the force applied at a point x and dx is a small interval of distance.

How do you calculate the work done over a small interval of distance?

Answer: The work done over a small interval of distance is calculated as dW = F(x)dx, where F(x) is the force applied at a point x and dx is a small interval of distance.

What is the relationship between the area under the force-distance curve and the total work done?

Answer: The area under the force-distance curve represents the total work done.

What is the formula for work when lifting a weight to a certain height?

Answer: The formula for work when lifting a weight to a certain height is W = ?[a,b] F(h)dh, where F(h) is the force required to lift the weight to a height h and dh is a small interval of height.

How do you calculate the work done over a small interval of height?

Answer: The work done over a small interval of height is calculated as dW = F(h)dh, where F(h) is the force required to lift the weight to a height h and dh is a small interval of height.

What does the definite integral represent in the context of work?

Answer: The definite integral represents the total work done over a distance or height.

How do you find the total work done when the force applied is constant?

Answer: When the force applied is constant, the total work done is calculated as W = F*d, where F is the constant force and d is the distance over which the force is applied.

What is the unit of work?

Answer: The unit of work is joule (J).

How do you calculate the work done when the force applied is in the opposite direction of the displacement?

Answer: When the force applied is in the opposite direction of the displacement, the work done is negative.

How do you calculate the work done when the force applied is perpendicular to the displacement?

Answer: When the force applied is perpendicular to the displacement, the work done is zero.