Answer on Question 52043, Physics, Mechanics | Kinematics | Dynamics

Question:

Which of the following quantities have the same dimensions?

a) moment and power

b) work and power

c) torque and work

d) work and upthrust

Answer:

The SI unit of work is joule (J), which is defined as the work expended by a force of one newton through a distance of one meter $(J = N \cdot m = kg \cdot \frac{m^2}{s^2})$. But the measurement unit of torque is also $N \cdot m$.

Thus, torque and work have the same dimensions - $N \cdot m$.

So, the correct answer is **c) torque and work**.