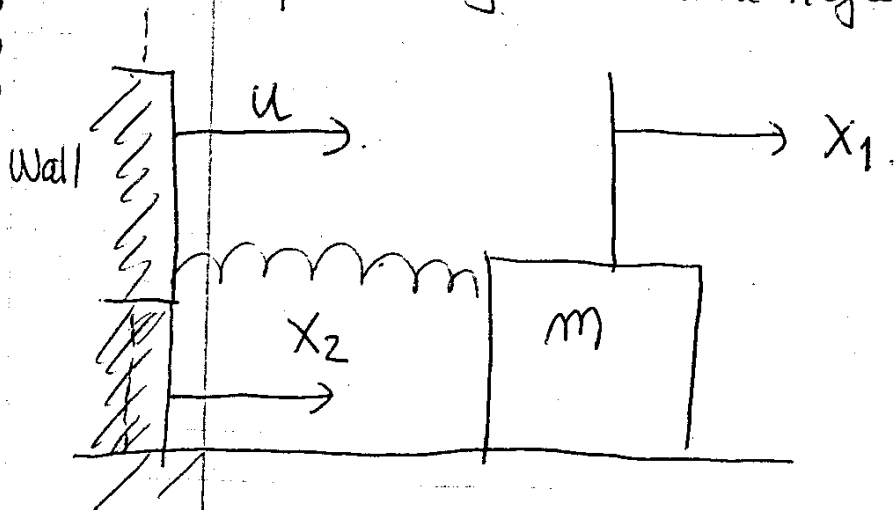


PROBLEM *5

A mass m is connected by means of a spring with spring constant K to a wall, which experiences a velocity shock. At $t=0$, the wall shown in the figure below instantaneously attains a constant velocity u to the right. If the mass is at rest at $t=0$, and if the spring is initially undeformed, determine the motion of the mass m as a function of time.

Assume frictional forces can be neglected.



Hint: Use your knowledge on transient phenomena to find the most general solution to the inhomogeneous eqn describing the motion of m .