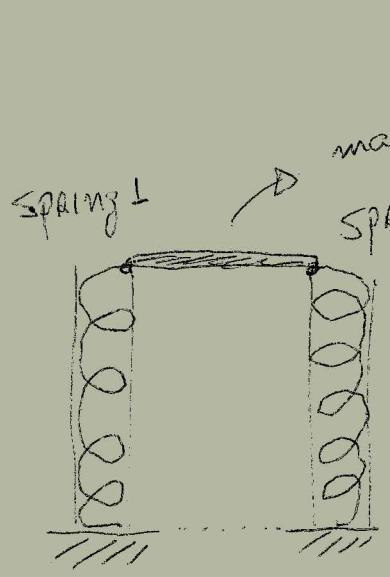


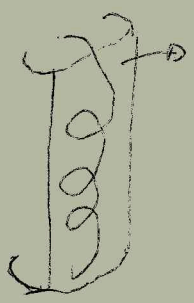
Two equal springs

$K_1 = K_2$

$m_1 = m_2$

rest lenght $= L$

The springs move inside vertical cilinders without friction



there is a hole in each cilinder to allow the springs move vertically

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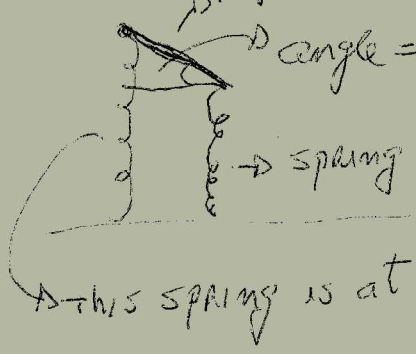
initial position



what are the differential equations for $y_1(t)$ and $y_2(t)$

y_1 and y_2 are the vertical position of each spring