38	
≈	D-700 1 200
30	Oscillations & Waves 2
**	
	Combing newton's second law onel hooke's law: m d24 = - k 4
3	land:
	m d29 = - k4
**	de
\$4 \$4 \$4 \$4 \$4	the solution to this equation is found by:
3	116 0010001 10 1110
	$\Psi = A\cos(\omega t + \emptyset)$
3	$\Psi = -\omega A \otimes S(\omega E + \emptyset)$
>6	$\dot{\psi} = -\omega^2 A \cos(\omega t + \emptyset)$
	Ψ = - (ω + (0) (ω t + V)
78	(m) 100 / (m) 100
	-mco2Acos(wt+Ø) =-KAcos(wt+Ø)
3	(A FOR MARCHED STORE -
-	if the co= Im, we find SHM is a
-	Solution to hooke's law.
2.0	d24 co24
	db2
	⇒ spring: W= \m -> T = 2H = 2H \m/k
	0
30	⇒ pendulum: Spring const. \= T -> CD = 1 -> T=27/5
	Gin - wire Di
-	if we look at the system 4= Acos(cot+&)
	coith two initial conditions:
•	(1) Y(t=0) = x0 => Acos Ø = x0
	(2) \((t = 0) = 0
	We get the solutions:
	$\psi = x_0 \cos(\omega t)$
	$\dot{y} = -\cos(\omega c)$
	$\dot{\psi} = -\cos \alpha_0 \sin(\cot)$ $\dot{\psi} = -\cos^2 \alpha_0 \cos(\cot) = -\cos^2 \psi$
	1 - 00 2000(000) - 00 1