

5(a)	(motion in which) acceleration is (directly) proportional to displacement
	(motion in which) acceleration is (always) in the opposite <u>direction</u> to displacement or acceleration is (always) directed towards a fixed point
5(b)(i)	period = $2\pi / 16$ = 0.39 s
5(b)(ii)	$v_0 = \omega x_0$ or $v_0 = \omega \sqrt{(x_0^2 - 0^2)}$
	$x_0 = 0.56 / 16$ = 0.035 m
5(b)(iii)	$v = \pm 16 \sqrt{(0.0352 - x^2)}$
5(b)(iv)	closed loop surrounding the origin
	loop crosses $v = 0$ at maximum values of x at $x = \pm 3.5$ cm
	loop crosses $x = 0$ at maximum values of v at $v = \pm 0.56$ m s ⁻¹