

*Show your work if you would like to receive any partial credit!*

1. A cam is to be designed using standard cam surfaces for the discrete intervals of the cam rotation. The lift displacement, velocity, and acceleration at several points are specified. Recommend standard curves.

Point A	Point B	Point C	Point D	Point E
$t = 0$	$t = 1 \text{ s}$	$t = 2 \text{ s}$	$t = 3 \text{ s}$	$t = 4 \text{ s}$
$S = 0$	$S = L$	$S = 3L/2$	$S = L/2$	$S = 0$
$V = 0$	$V = V_2$	$V = 0$	$V = -V_4$	$V = 0$
$A = 0$	$A = 0$	$A = 0$	$A = 0$	$A = A_5$

A to B

B to C

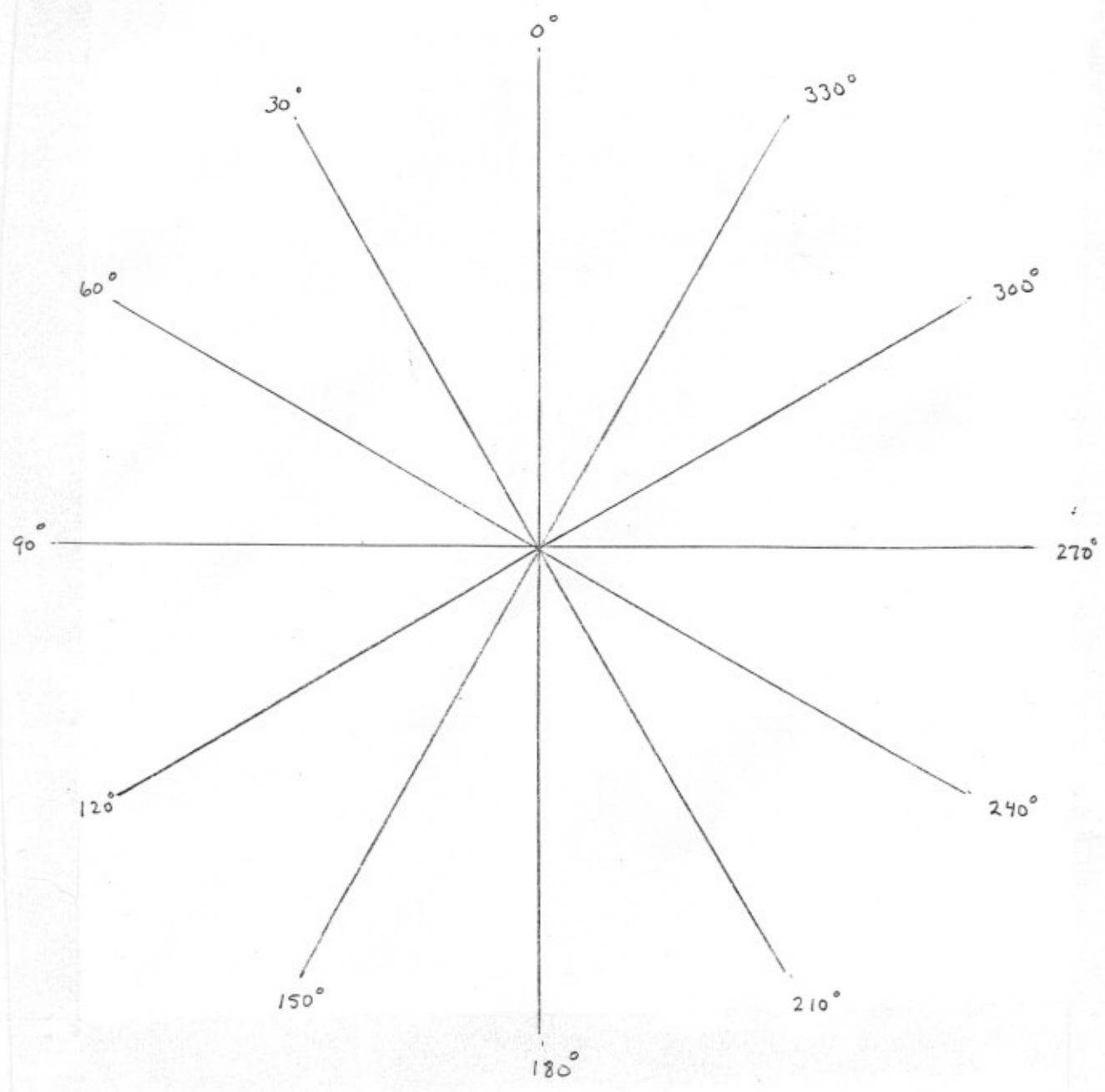
C to D

D to E

2

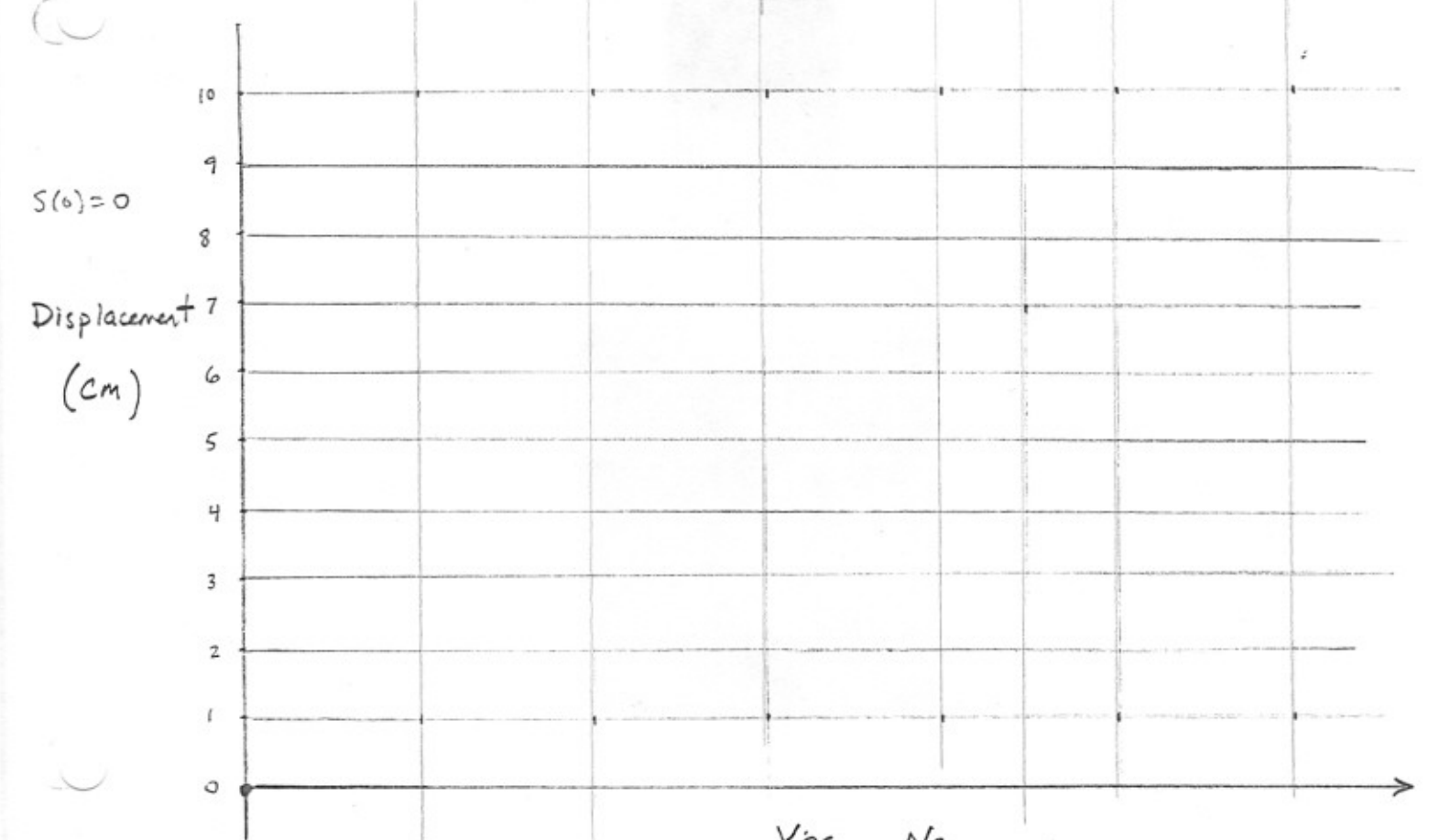
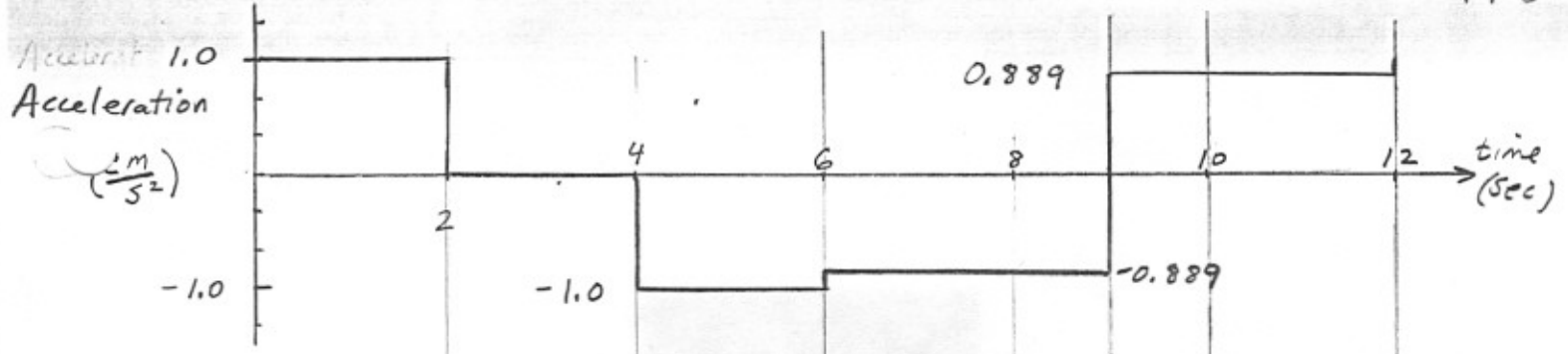
A cam is to be designed for a flat face radial follower. The follower displacement at various angular positions is given below. Using a base circle radius of 1cm, draw the cam and determine if undercutting exists.

Angle (deg)	0	30	60	90	120	150	180	210	240	270	300	330	360
Displacement (cm)	0	0.5	1.0	2.0	2.5	2.5	2.5	2.5	2.0	1.5	1.0	0.5	0



Does undercutting exist?

③ Draw and dimension the velocity and displacement diagrams 14-3



Is this a good cam design?  Yes  No Why?