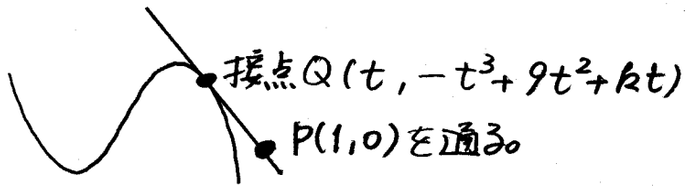
[51]



C: $y=-x^3+9x^2+kx$

$y'=-3x^2+18x+k$

↓ $x=t$を代入

傾き $-3t^2+18t+k$

接線は

$y-(-t^3+9t^2+kt)=(-3t^2+18t+k)(x-t)$

$y=(-3t^2+18t+k)x-t(-3t^2+18t+k)$
$\quad +(-t^3+9t^2+kt)$

$y=(-3t^2+18t+k)x+2t^3-9t^2$

P(1,0)を代入して

$0=(-3t^2+18t+k)+2t^3-9t^2$

$-2t^3+12t^2-18t=k$ //(ア~オ)

$\begin{cases} y=p(t)=-2t^3+12t^2-18t \\ y=k \end{cases}$

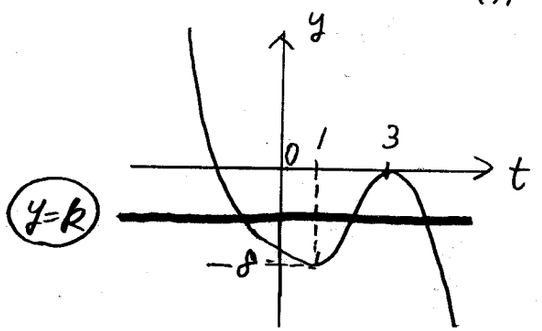
$p'(t)=-6t^2+24t-18$

$=-6(t^2-4t+3)$

$=-6(t-1)(t-3)$

t	…	1	…	3	…
$p'(t)$	−	0	+	0	−
$p(t)$	↘	-8	↗	0	↘

極小値 -8 $(t=1)$
極大値 0 $(t=3)$ //(カ~コ)



接線2本 ⇔ $k=0, -8$ //(サ,シ)

$k=5 \Rightarrow$ 1本 //(セ)　　$k=-2 \Rightarrow$ 3本 //(ソ)

$k=-12 \Rightarrow$ 1本 //(タ)