

1 Dimensional Particle Motion Sketches

1) $s(t) = t^3 - 6t^2$

$v(t) = 3t^2 - 12t$

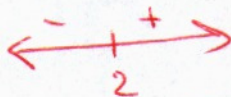
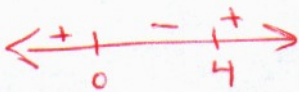
$a(t) = 6t - 12$

$3t(t-4) = 0$

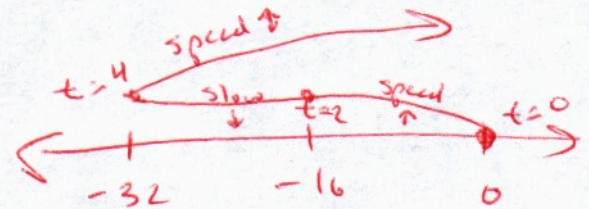
$6t - 12 = 0$

$t=0 \quad t=4$

$t=2$



t	0	2	4	
s	0	-16	-32	
v		-	-	+
a		-	+	+
behavior		left	left	right
		Speed	slow	Speed

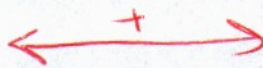
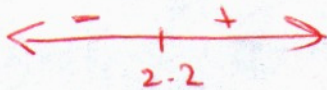


2) $s(t) = 5t^2 - 22t$

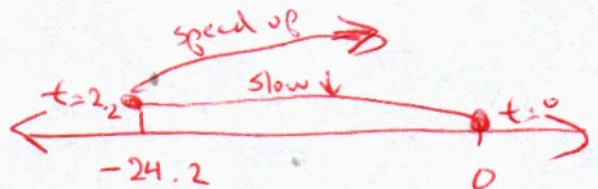
$v(t) = 10t - 22$

$a(t) = 10$
No value of t

$t = 2.2$



t	0	2.2	
s	0	-24.2	
v		-	+
a		+	+
behavior		left	right
		slow	speed



3) $s(t) = t^3 - 6t^2 + 9t + 1$

$v(t) = 3t^2 - 12t + 9$

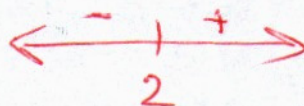
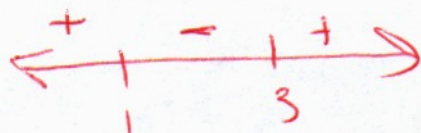
$a(t) = 6t - 12$

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

$t = 2$

$3(t-3)(t-1) = 0$

$t=3 \quad t=1$



t	0	1	2	3	
s	1	5	3	1	
v		+	-	-	+
a		-	-	+	-
behavior		right	left	left	right
		slow	speed	slow	speed

