

1) $6x^2 - 14x + 11$	2) $5x^4 - 3x^2$	3) $12x + 13$	4) $12x^2 - 16x + 20$																																				
5) $\frac{4}{(x-1)^2}$	6) 1	7) $\frac{-6}{(x-4)^2}$	8) Tangent: $y - 2 = \frac{-1}{4}(x - 8)$ Normal: $y - 2 = 4(x - 8)$																																				
9) Velocity: $4t^3 - 9t^2 + 6t + 3$ Acceleration: $12t^2 - 18t + 6$	10) <table border="1"> <tr> <td>t</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>S(t)</td> <td>-5</td> <td>-16</td> <td>-27</td> <td>-32</td> <td>-25</td> </tr> <tr> <td>v(t)</td> <td>-9</td> <td>-12</td> <td>-9</td> <td>0</td> <td>15</td> </tr> <tr> <td>a(t)</td> <td>-6</td> <td>0</td> <td>6</td> <td>12</td> <td>18</td> </tr> </table> b) <table border="1"> <tr> <td>Direction</td> <td>Backward</td> <td>Backward</td> <td>Backward</td> <td>Neither</td> <td>Forward</td> </tr> <tr> <td>Speed up/down</td> <td>Up</td> <td>Neither</td> <td>Down</td> <td>Neither</td> <td>up</td> </tr> </table>			t	1	2	3	4	5	S(t)	-5	-16	-27	-32	-25	v(t)	-9	-12	-9	0	15	a(t)	-6	0	6	12	18	Direction	Backward	Backward	Backward	Neither	Forward	Speed up/down	Up	Neither	Down	Neither	up
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11) No maximum speed decreases speed till $t=11/5$ then speeds up forever. Highest speed will be going forward		12) a) 4,2 b) (2,4) c) $(-\infty, 2) \cup (4, \infty)$ d) $t=3$																																					
13) a) 3 b) $(3, \infty)$ c) $(-\infty, 3)$ d) Never	14) $t = \sqrt{5}$ $s = \frac{\sqrt{5}}{10}$	15) a) $s=-15, v=-12$ b) $s=1$ and $-31$ a) $-12$ and $12$	16) a) $t = 3 \pm \sqrt{6}$ b) $t=0, -2$																																				
17) a) 20 b) 1,2 : Car b @ $t=1$ car A @ $t=2$ c) Car b: Car a																																							