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12 429 79 13 523 87 14 614 95 15 665 100 16 755 106 17 888 117 18 1019 126 19 1158 136	10	283	63	
13 523 87 14 614 95 15 665 100 16 755 106 17 888 117 18 1019 126 19 1158 136	11	334	69	
14 614 95 15 665 100 16 755 106 17 888 117 18 1019 126 19 1158 136	12	429	79	
15 665 100 16 755 106 17 888 117 18 1019 126 19 1158 136	13	523	87	
16 755 106 17 888 117 18 1019 126 19 1158 136	14	614	95	
17 888 117 18 1019 126 19 1158 136	15	665	100	
18 1019 126 19 1158 136	16	755	106	
19 1158 136	17	888	117	
19 1158 136	18	1019	126	
20 1334 148		1158		
	20	1334	148	



The final launch of NASA's space shuttle Endeavor (STS-134) occurred on May 16, 2011 at 8:56:28 a.m. EDT from launch pad 39A. The image above was taken 17 seconds after launch. See the launch video on YouTube at

http://www.youtube.com/watch?v=ShRa2RG2KDI

This historic flight was watched by millions of people world-wide. The table above shows the speed and altitude data for the first 20 seconds after launch. The combined fuel tanks and Orbiter had a mass of 2,052,443 kg at launch. The launch gantry had a height of 106 meters.

Problem 1 - Plot the altitude of Endeavor Shuttle versus time during the first 20 seconds of launch.

Problem 2 - Plot the speed of the Endeavor Shuttle versus time during the first 20 seconds of launch.

Problem 3 - About what is the speed of the Shuttle when it clears the gantry in A) meters/sec/ B) miles per hour?

Problem 4 - What is the average acceleration of the shuttle during its first 20 seconds of flight?