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University of Portland
 ME 403/503 – Engineering Design, Product Realization
 Fall 2016

- 1) Consider the 2^2 factorial experiment in the DOE PowerPoint notes with three replicates (data on p126). Do the calculations and fill in the blanks in the table below. Check your answers with page 138 of the notes.

Design Point	1	2	1X2	Xi (average of multiple data)	SS
1	+	+	+	83.0	
2	-	+	-	83.3	
3	+	-	-	89.0	
4	-	-	+	90.3	
Sum (+)					
Sum (-)					
difference					
Effect					
Std Error					
t_0					
$t_{0.05/2,8}$					
Effect?					

- 2) Continue to work on the Silly Putty DOE – we’ll discuss specifically what needs to be done next in class.
- 3) Watch “Black Sky, the Race for Space and Winning the X-Prize”. This is a 2-part documentary with Part 1 showing much of the prototype development and Part 2 is more about the X-Prize flight and events leading up to it. Be ready to discuss in class Part 1 in class by next Tuesday (10/11). Be ready to discuss Part 2 the following Tuesday (10/18)
- a) Part 1 (43 min): <https://www.youtube.com/watch?v=klw3Cc369so>
 - b) Part 2 (1 hr, 26 min): <https://www.youtube.com/watch?v=XUT7FCFykkw>