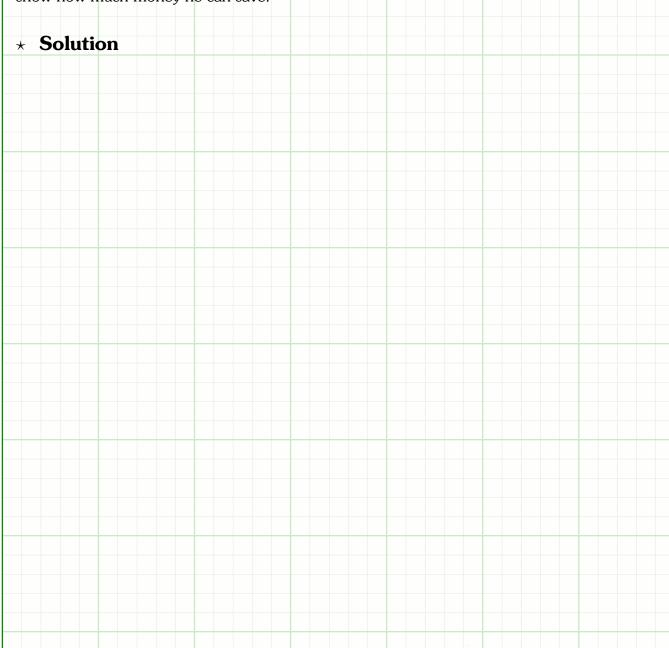
Question 1: Plackett-Burman

* Given

A gold placer mining operation in the Klondike is operating a complex wash plant / sluice system. The claim owner wants to determine the key factors that drive the final gold output. There are 28 factors he would like tested. You have interested him in a Plackett-Burman design. Answer his following questions:

- 1. How many different settings selections [aka runs] are required?
- 2. Is there anyway without reducing the number of factors tested, to reduce the number of times the slice gate angle is changed; as it is an all day event?

He seems a bit irritated with your answer to #1. Explain to him how, if he is willing to drop one factor, you can modify the PB design significantly? If each run costs \$50,000 to complete, show how much money he can save.



Question 3: RSM

* Given

Given a first pass experiment $[2^2]$ BFFE with two center points] resulted in the following model equation:

$$\hat{y} = -35.9 + 2.52x_1 - 6.42x_2 + 2.35x_1x_2$$

* Find

- 1. What should be the next 4 points tested?
- 2. After locating and setting up a secondary experiment the following was determined to be an viable model

$$\hat{y} = 70.549 + 2.326w_1 - 5.771w_1w_2 - 4.781w_1^2 + 3.062w_2^2$$

The junior engineer deleted the regression model. Determine if there is a stationary point within this range and what it is, if it exists. [You do not to say what kind it is]

* Solution

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response	earned in class to get s	ettings required to	achieve at least 4	5 in
2. Document your ratio	nale for each step of yo	our process		
3. Confirm your setting 45	s with a 50 experiment	tal sample run set	that has an averag	je ab
Remember you need to to work	have shiny and shinydas	shboard installed ar	nd loaded for the sir	nula
	END OF ASSI	GNMENT		