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Saturday, April 8, 2023   1:53 PM

Section 1

MANE 6313

Subsection 1

Week 13, Module B

Student Learning Outcome

- Select an appropriate experimental design with one or more factors,
- Select an appropriate model with one or more factors,
- Evaluate statistical analyses of experimental designs,
- Assess the model adequacy of any experimental design, and
- Interpret model results.

Module Learning Outcome

Introduce graphical analysis in rsm.

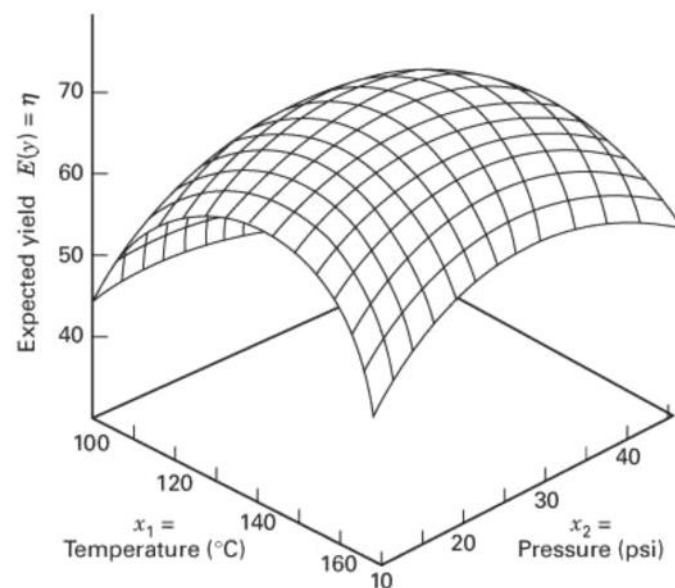# Types of Graphs used in RSM

- Contour plot
- 3D plot

3D Plot

PersP

FIGURE 11.1 A three-dimensional response surface showing the expected yield (η) as a function of temperature (x_1) and pressure (x_2)

Figure 1: Textbook Figure 11.1

Contourplot

(a) Response surface

(b) Contour plot

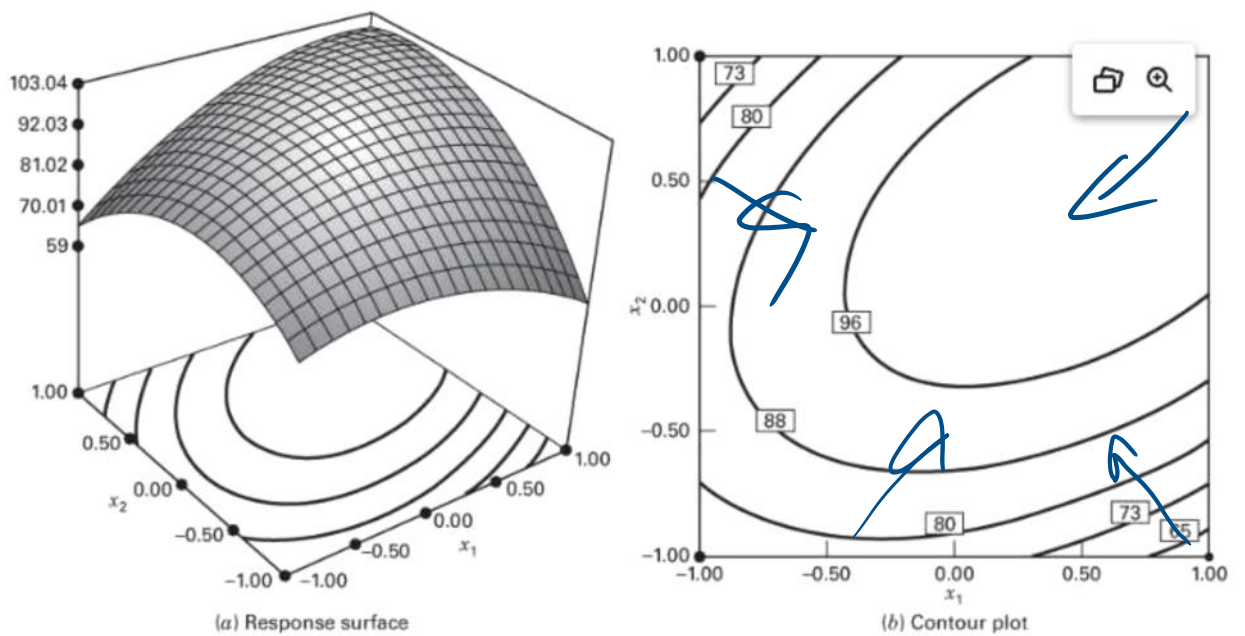**FIGURE 11.6** Response surface and contour plot illustrating a surface with a maximum

Figure 2: Textbook Figure 11.6
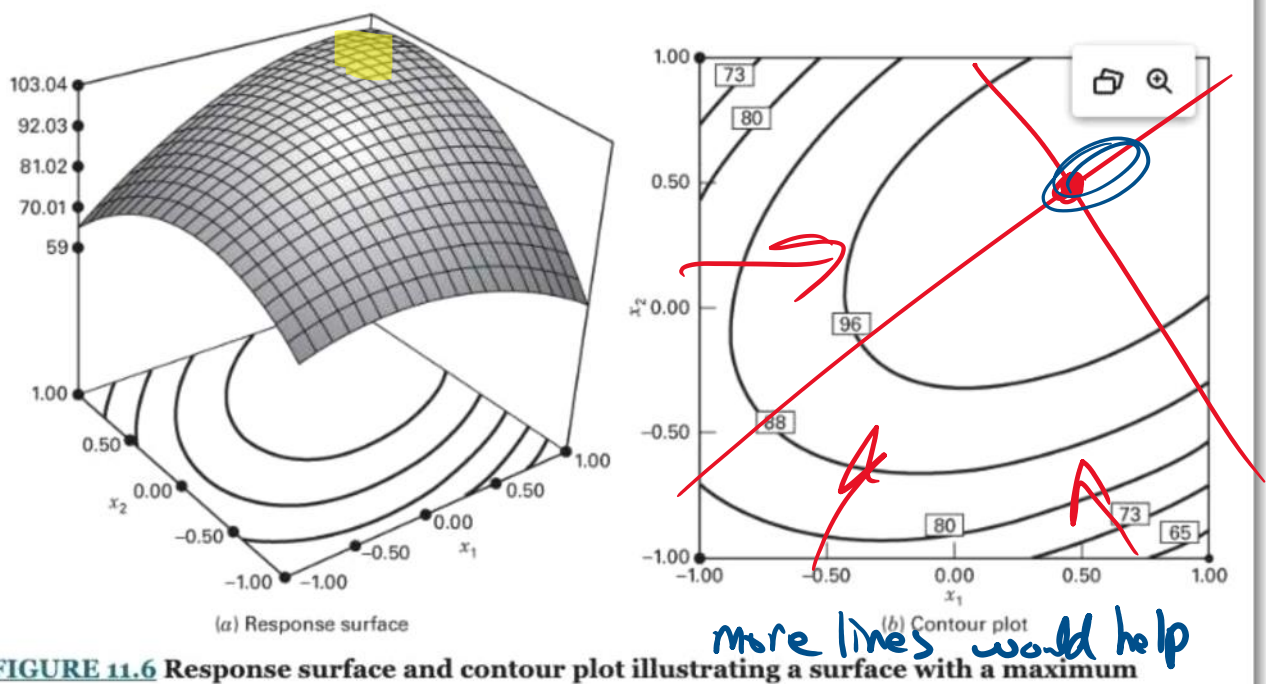
Function with a Maximum

(a) Response surface

(b) Contour plot

more lines would help

FIGURE 11.6 Response surface and contour plot illustrating a surface with a maximum

Figure 3: Textbook Figure 11.6

Function with a Minimum

(a) Response surface

(b) Contour plot

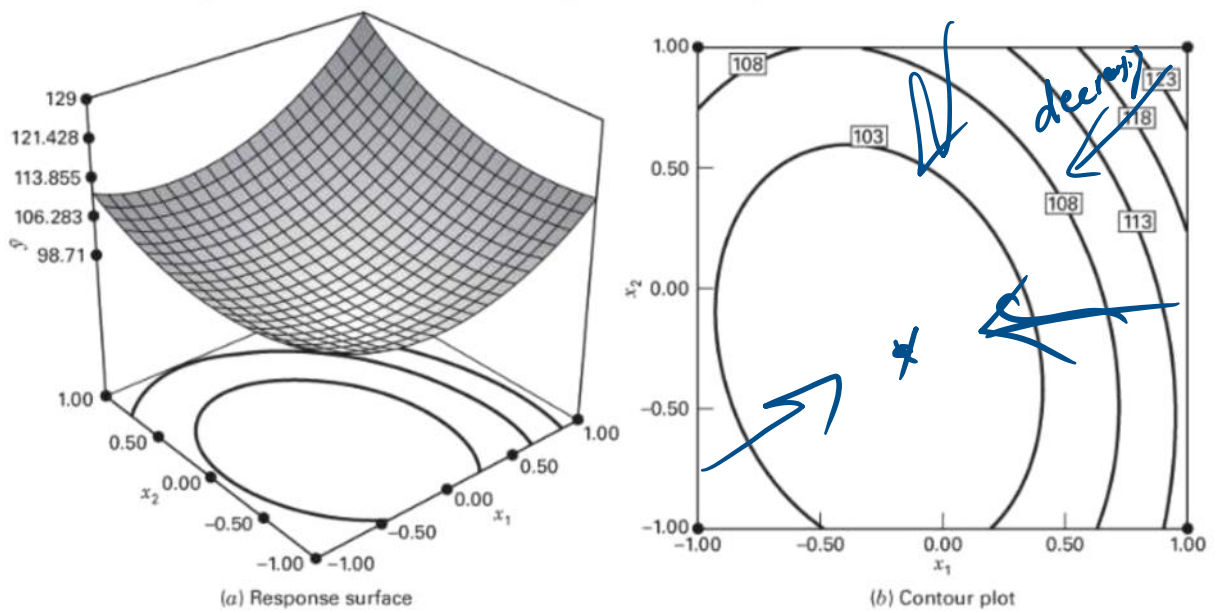**FIGURE 11.7** Response surface and contour plot illustrating a surface with a minimum

Figure 4: Textbook Figure 11.7

Function with a Saddle Point

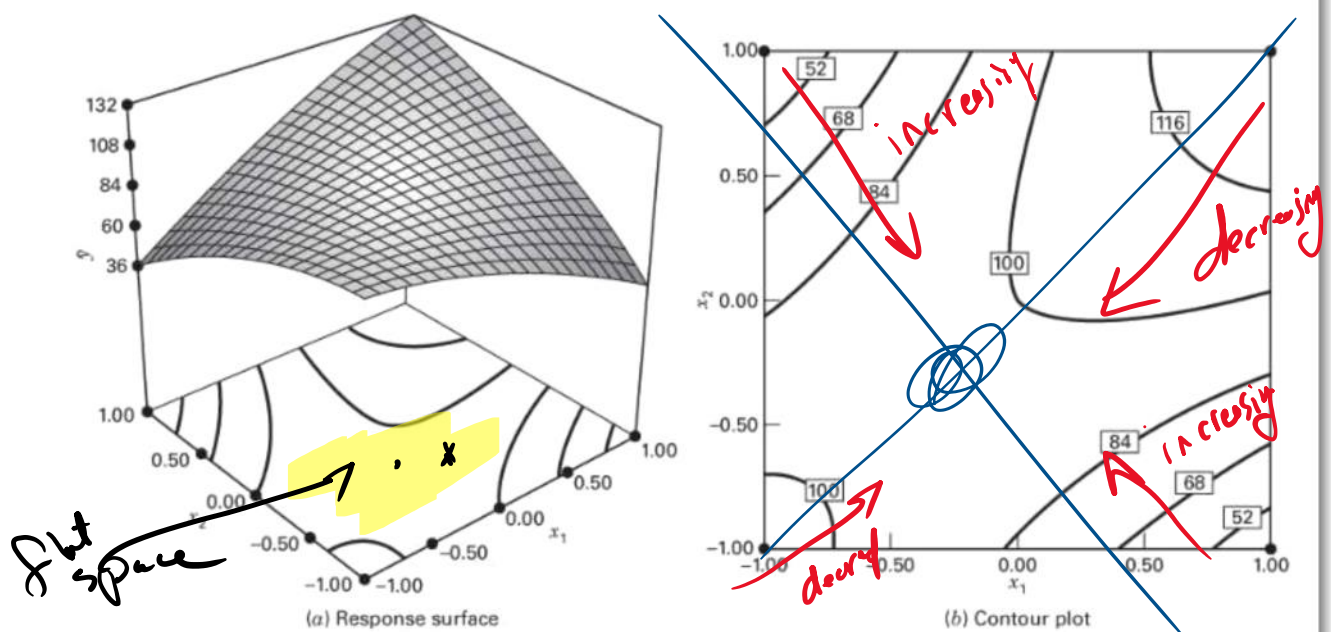**FIGURE 11.8** Response surface and contour plot illustrating a saddle point (or minimax)

Figure 5: Textbook 11.8