Student handout

Working in groups of 3, solve as many of the problems below as possible. Try to resolve questions within the group before asking for help. Each person should turn in their solutions to two surfaces.

Show your work! Full credit will only be given if your answer is supported by calculations and/or explanations as appropriate.

Choose one of the eight surfaces given below.

A $z - \frac{x^2}{4} - \frac{y^2}{4} = 0$	**B** $18x^2 - \frac{9}{2}y^2 = 18 + 2z^2$	**C** $z - \frac{x^2}{4} + \frac{y^2}{4} = 0$	**D** $\frac{x^2}{9} + \frac{y^2}{4} = 1 - \frac{z^2}{16}$
E $\frac{x^2}{9} + \frac{y^2}{4} = \frac{z^2}{16}$	**F** $\frac{4x^2}{9} + y^2 = 4 + \frac{z^2}{4}$	**G** $z - xy = 0$	**H** $9y = x^2$

1. **Ready** Choose an appropriate variable for your surface (e.g. x, y, or z).

2. **Set** Sketch the level curves or traces for several different values of that variable. You should have 5 different curves.

3. **Go!** "Stack" the planes into position on the appropriate axis. Can you draw the surface? If so, do it! If not, what other information do you need to draw the surface?

4. **Next** Go back and try this with another surfaces, chosen from a different row and column.