YAPS: Yet Another Problem Set: Drawing Surfaces

The following are questions/issues to help you to organize your thoughts. The answers are to be found by looking at the work we did in class.

1) What are the equations of the four surfaces you are expected to draw?

2) Page two has pictures of four surfaces. Which equation goes with which picture?

3) Let \( z = f(x, y) \). What does it look like to locate \( P, f(P) \) on the surface?

4) Let \( z = f(x, y) \). What is a trace? What is a level curve?

5) Let \( z = f(x, y) \). What does it mean to draw a trace in the \( yz \) plane? Which trace would it be? The kind of answer I’m looking for is ‘It could be \( z = f(x, \frac{1}{2}) \).’

6) When you draw a surface, you’re expected to use the ‘standard orientation.’ What is the standard orientation?

7) Page three has several traces. The axes are in the standard orientation; which traces are they? The kind of answer I’m looking for is ‘It could be \( z = f\left(\frac{1}{2}, y\right) \).’

8) Let \( z = f(x, y) \). When I drew traces on the surface, I used the ‘three point method’ to draw. What is that method?