

1. Find a plane that contains the point $Q = (1, 2, -1)$ and is perpendicular to the vector \vec{PQ} is $P = (3, 0, 1)$.
2. Find the distance from this plane to the point $R = (0, 3, -2)$.
3. Find a plane that contains the point R and is perpendicular to \vec{QR} .
4. Find the line of intersection between the 2 found planes.
5. Create a plane parallel to one of the 2 found planes that goes through the origin.
6. Find the distance between the parallel planes.
7. Create a plane perpendicular to the first plane and goes through the point Q .
8. Graph and describe the surface of $x = y^2$.
9. Graph and describe the surface of $x^2 + z^2 = 4$.
10. Graph and describe the surface of $z^2 - y^2 = 1$.
11. Describe the surface $x^2 + 3y^2 - z = 0$
12. Describe the surface $(x - 2)^2 + (y + 1)^2 + z^2 = 25$
13. Describe the surface $(x - 2)^2 + 3(y + 1)^2 + 5z^2 = 25$
14. Describe the surface $(x - 2)^2 + 3(y + 1)^2 = 25$
15. Describe the surface $(x - 2)^2 + 3(y + 1)^2 - z^2 = 0$
16. Describe the surface $(x - 2)^2 + 3(y + 1)^2 - z^2 = 1$
17. Describe the surface $-(x - 2)^2 - 3(y + 1)^2 + z^2 = 1$