3.4 A two-dimensional symmetrical prism floats in water as shown in Figure P2.34. The base is parallel to the surface. If the specific gravity of the prism material is 0.25, find the ratio $a/d$.

![Figure P2.34](image)

2.43 A rectangular cork float is attached rigidly to a vertical gate as shown in Figure P2.43. The gate can swing about a frictionless hinge. Find an expression for the depth of water $D$ where the gate will just open, in terms of $a, b, L,$ and $h$. The cork float has the same width $w$ as the gate, and the specific gravity of cork is 0.24.

![Figure P2.43](image)