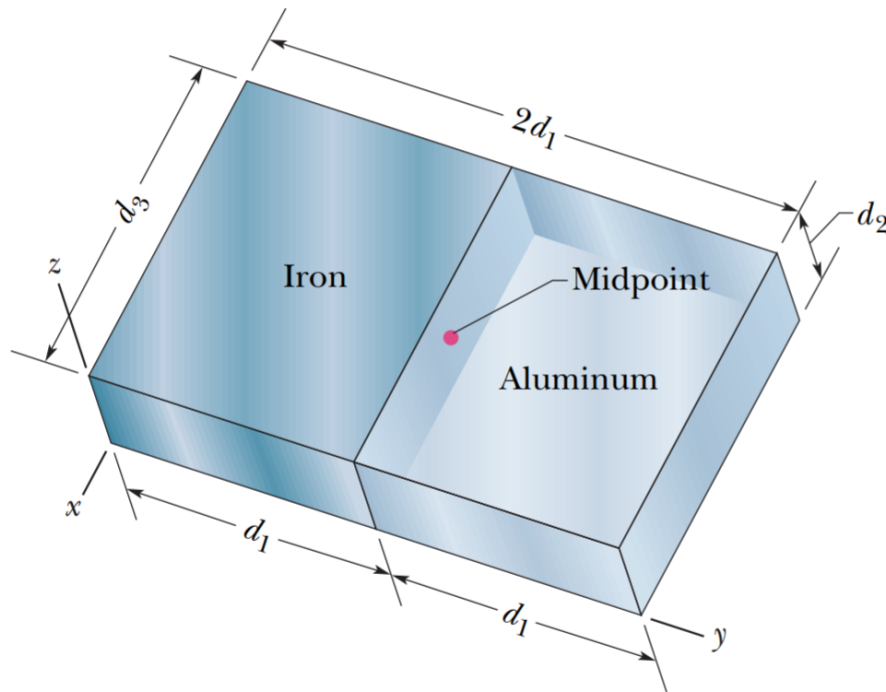


## Tutorial Biomedical Physics – Week 4

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August 2021

- 3 Figure 9-36 shows a slab with dimensions  $d_1 = 11.0$  cm,  $d_2 = 2.80$  cm, and  $d_3 = 13.0$  cm. Half the slab consists of aluminum (density =  $2.70$  g/cm<sup>3</sup>) and half consists of iron (density =  $7.85$  g/cm<sup>3</sup>). What are (a) the  $x$  coordinate, (b) the  $y$  coordinate, and (c) the  $z$  coordinate of the slab's center of mass?



**Fig. 9-36** Problem 3.

**••13 SSM** A shell is shot with an initial velocity  $\vec{v}_0$  of 20 m/s, at an angle of  $\theta_0 = 60^\circ$  with the horizontal. At the top of the trajectory, the shell explodes into two fragments of equal mass (Fig. 9-42). One fragment, whose speed immediately after the explosion is zero, falls vertically. How far from the gun does the other fragment land, assuming that the terrain is level and that air drag is negligible?

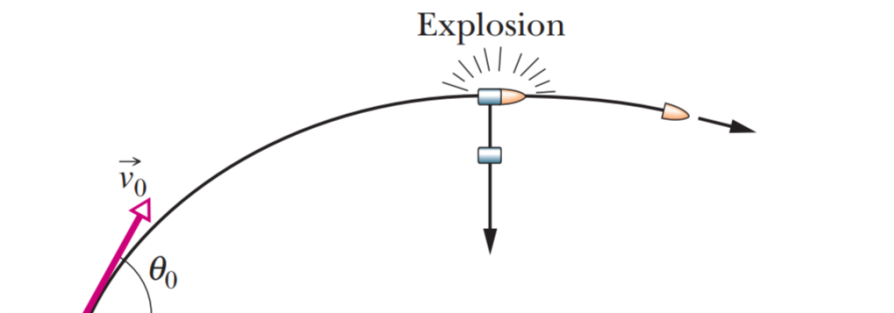


Figure 9-42 Problem 13.