5 Two spheres of the same size but different mass make head-on collisions. The black sphere is half the mass of the white sphere. In each collision, one of the masses is initially at rest and both masses move after the collision.

In which situation is the collision perfectly elastic?

	before	after
A	$6\,m\,s^{-1}$ → ○ $2m$ ● m	$3\,m\,s^{-1}$ → ○ $2m$ $6\,m\,s^{-1}$ → ● m
B	$6\,m\,s^{-1}$ → ● m ○ $2m$	$2\,m\,s^{-1}$ → ● m $4\,m\,s^{-1}$ → ○ $2m$
C	$6\,m\,s^{-1}$ → ○ $2m$ ● m	$2\,m\,s^{-1}$ → ○ $2m$ $8\,m\,s^{-1}$ → ● m
D	$6\,m\,s^{-1}$ → ● m ○ $2m$	$1\,m\,s^{-1}$ → ● m $5\,m\,s^{-1}$ → ○ $2m$