HW7-6 Soln)

	v_i	convert	v_i'	Find v_f'	convert back to original frame by reversing the previous transformation	v_f
M_1	+20 m/s	+5	+25 m/s	$v'_{1xf} = \frac{m_1 - m_2}{m_1 + m_2} v'_{1xi}$ $= \frac{10 - 15}{10 + 15} 25$ $= -5\ \mathrm{m/s}.$	-5	-10 m/s
M_2	-5 m/s	+5	0 m/s	$v'_{2xf} = \frac{2m_1}{m_1 + m_2} v'_{1xi}$ $= \frac{2(10)}{10 + 15} 25$ $= 20\ \mathrm{m/s}.$	-5	+15m/s

The difference in initial velocities is 25 m/s and the difference in final velocities is -25 m/s. Check.