Values of $\int_0^L mM\,dx$

	Linear M diagrams				Parabolic M diagrams*		
M \ m	M rectangle, L	M_0 triangle, L	triangle M_1, L	M_0 trapezoid M_1, L	slope=0, parabola M_1, $L/2$ $L/2$	slope=0, parabola M_1, L	slope=0, M_0 parabola M_1, L
m rectangle, L	LmM	$\dfrac{L}{2}mM_0$	$\dfrac{L}{2}mM_1$	$\dfrac{L}{2}m(M_0+M_1)$	$\dfrac{2L}{3}mM_1$	$\dfrac{L}{3}mM_1$	$\dfrac{L}{3}m(2M_0+M_1)$
m_0 triangle, L	$\dfrac{L}{2}m_0M$	$\dfrac{L}{3}m_0M_0$	$\dfrac{L}{6}m_0M_1$	$\dfrac{L}{6}m_0\times$ $(2M_0+M_1)$	$\dfrac{L}{3}m_0M_1$	$\dfrac{L}{12}m_0M_1$	$\dfrac{L}{12}m_0\times$ $(5M_0+M_1)$
m_1 triangle, L	$\dfrac{L}{2}m_1M$	$\dfrac{L}{6}m_1M_0$	$\dfrac{L}{3}m_1M_1$	$\dfrac{L}{6}m_1\times$ (M_0+2M_1)	$\dfrac{L}{3}m_1M_1$	$\dfrac{L}{4}m_1M_1$	$\dfrac{L}{4}m_1\times$ (M_0+M_1)
m_0 trapezoid m_1, L	$\dfrac{L}{2}(m_0+m_1)M$	$\dfrac{L}{6}(2m_0+m_1)$ $\times M_0$	$\dfrac{L}{6}(m_0+2m_1)$ $\times M_1$	$\dfrac{L}{6}\big[m_0(2M_0+M_1)$ $+m_1(M_0+2M_1)\big]$	$\dfrac{L}{3}(m_0+m_1)M_1$	$\dfrac{L}{12}(m_0+3m_1)$ $\times M_1$	$\dfrac{L}{12}\big[m_0(5M_0+M_1)$ $+3m_1(M_0+M_1)\big]$

* - note: M_0 and M_1 are positive in the directions shown

Most general case:
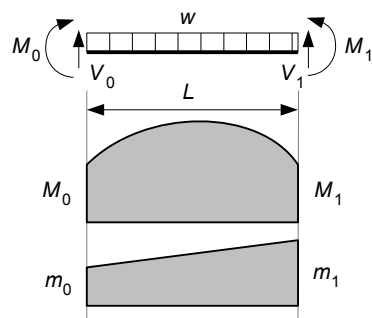
$\int mM\,dx = \dfrac{L}{24}\Big[m_0\big(wL^2+8M_0+4M_1\big)+m_1\big(wL^2+4M_0+8M_1\big)\Big]$

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