



$$\begin{aligned}
 12 &= x(8-x) \\
 12 &= 8x - x^2 \\
 0 &= -x^2 + 8x - 12 \\
 x &= 2, 6
 \end{aligned}$$

a) $m(6, 12)$.

b) $\int_6^8 x(8-x) dx = \int_6^8 (8x - x^2) dx = \left[4x^2 - \frac{1}{3}x^3 \right]_6^8$

$$8) \int \left(\frac{a}{3x^3} - ab \right) dx = \boxed{-\frac{2}{3x^2} + 14x + c}$$

$$\begin{aligned} \int \left(\frac{a}{3} x^{-3} - ab \right) dx &= -\frac{1}{2} \times \frac{a}{3} x^{-2} - abx + c \\ &= -\frac{a}{6} \times \frac{1}{x^2} - abx + c \\ &= \boxed{-\frac{a}{6x^2} - abx + c} \end{aligned}$$

$$\begin{aligned} \frac{a}{3x^3} &= \frac{a}{3} \times \frac{1}{x^3} \\ &= \frac{ax^{-3}}{3} \\ &= \underline{\underline{\frac{a}{3} x^{-3}}} \end{aligned}$$

$$\begin{aligned} 14 &= -ab \\ -\frac{2}{3} &= -\frac{a}{6} \\ a &= 4 \end{aligned}$$

$$\begin{aligned} 14 &= -4b \\ b &= \frac{-14}{4} = \underline{\underline{-3.5}} \end{aligned}$$