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ARCH 324 - Structures 2, Winter 2009

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\[ K \]

\[ 16 - 3 \]

\[ 6' \]

\[ M_L = 36K \]

\[ V = 6K \]

\[ R = \frac{M}{L} = \frac{36K}{24} = 1.5K \]

\[ \Theta_R = \frac{ML}{6K} = -144 \]

\[ R = \frac{5PL^2}{8L} = +320 \]

\[ \Theta_R = \frac{WL^2}{24} = +576 \]

\[ M_8 = 24' \]

\[ M_8 = 752 \, \text{Kf} \]

\[ R_R = -1.5 + 6 + 12 + 3.917 = 20.42 \, \text{Kf} \]

\[ R_L = (7.5 + 6) + 3 + 12 - 3.917 = 18.58 \, \text{Kf} \]

\[ \Theta = 0 = -144 + 320 + 576 - M_8 \]

\[ R_{TOTAL} = 39.00 \, \text{Kf} \]

\[ -6 - 9 - 24 = -39 < \text{balanced} \]
\[ \begin{align*}
37.28 &= x \times 12.42 + \frac{x^2}{2} \\
6 \times 24.84x - 74.56 &= 0 \\
x &= 2.707
\end{align*} \]