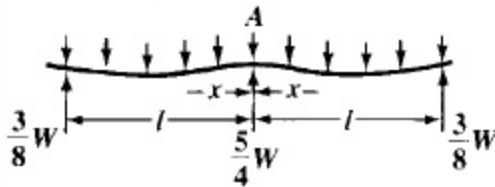


# Stresses and Deflections in Beams (Continued)

Type of Beam	Stresses		Deflections	
	General Formula for Stress at any Point	Stresses at Critical Points	General Formula for Deflection at any Point <sup>a</sup>	Deflections at Critical Points <sup>a</sup>
Case 22. — Continuous Beam, with Two Equal Spans, Uniform Load				
<p>TOTAL LOAD ON EACH SPAN, <math>W</math></p> 	$s = \frac{W(l-x)}{2Zl}(\frac{1}{4}l - x)$	<p>Maximum stress at point</p> $u = \frac{l_2}{W_2}(W_2 - R_2)$ <p>Stress is zero at <math>x = \frac{3}{8}l</math></p> <p>Greatest negative stress is at <math>x = \frac{3}{8}l</math> and is,</p> $-\frac{9}{128} \frac{Wl}{Z}$	$y = \frac{Wx^2(l-x)}{48EI}(3l - 2x)$	<p>Maximum deflection is at <math>x = 0.5785l</math>, and is <math>\frac{Wl^3}{185EI}</math></p> <p>Deflection at center of span,</p> $\frac{Wl^3}{192EI}$ <p>Deflection at point of greatest negative stress, at <math>x = \frac{3}{8}l</math> is</p> $\frac{Wl^3}{187EI}$
Case 23. — Continuous Beam, with Two Equal Spans, Equal Loads at Center of Each				