

#32

$$y = x^m$$

$$y' = m x^{m-1}$$

$$y'' = m(m-1) x^{m-2}$$

$$x^2 (m(m-1) x^{m-2}) - 7x m x^{m-1} + 15 x^m = 0$$

$$x^m (m^2 - m - 7m + 15) = 0$$

$$m^2 - 8m + 15 = 0$$

$$(m-3)(m-5) = 0 \quad m=3 \text{ or } 5$$

x^3 and x^5 are both solns.