

**Solution** (#1649) (i) Let  $a, b, c$  be distinct reals. The DE

$$y'' - (a + b)y' + aby = e^{cx},$$

has general solution

$$y = Ae^{ax} + Be^{bx} + \frac{e^{cx}}{(c - a)(c - b)}.$$

(ii) Let  $a = c \neq b$ . The general solution is

$$y = Ae^{ax} + Be^{bx} + \frac{xe^{cx}}{(a - b)}.$$