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$$3 + 3^x = 3^{3+x} + 3^{2x+2}$$

let $y = 3^x$ \rightarrow substitute

$$3 + y = 27y + 9y^2$$

$$(y+3)(9y-1) = 0$$

$$y = -3 \text{ or } y = \frac{1}{9}$$

$$(\text{No Solution}) \text{ or } 3^x = 3^{-2}$$



$$x = -2$$

$$3^x = -3$$

$$x = ?$$

$$\begin{aligned} \textcircled{1} 3^{3+x} &= 3^3 \cdot 3^x = 27 \cdot 3^x \\ \textcircled{2} 3^{2x+2} &= 3^2 \cdot 3^{2x} = 9 \cdot (3^x)^2 \end{aligned}$$