

3.77
k3

$$\left[\left(x^{-\frac{1}{4}} - x \right) \left(x^{\frac{9}{4}} + 1 \right) \right]^{14} \left(x^{\frac{9}{4}} + 1 \right) = \left(x^{-\frac{1}{4}} - x^{\frac{9}{4}} - x - x \right)^{14} \left(x^{\frac{9}{4}} + 1 \right) =$$
$$\left(x^{-\frac{1}{4}} - x^{\frac{9}{4}} \right)^{14} \left(x^{\frac{9}{4}} + 1 \right)$$

$$T_{k+1} = \binom{14}{k} x^{-\frac{1}{4}(14+k)} \left(x^{\frac{9}{4}} \right)^k$$

$$x^{\frac{3}{4}}: -3\frac{1}{2} + \frac{1}{4}k + \frac{9}{4}k = \frac{3}{4} \rightarrow 2.5k = 11.25 \rightarrow \text{not } k$$

$$x^9: -3\frac{1}{2} + \frac{1}{4}k + \frac{9}{4}k = 9 \rightarrow 2.5k = 12.5 \rightarrow 5 = k$$

$$T_6 = -\binom{14}{5} = -2002$$