(a) \[ C(k) = \begin{cases} 
5000k + 5000 & 0 < k \leq 2 \\
6000k + 3000 & 2 < k 
\end{cases} \]

(b) \( C'(1.5) = 5000 \). This means the cost of installing slightly more (respectively, less) than 1.5 panels is $5000 more (respectively, less) than \( C(1.5) \) per panel.

\( C'(2) \) is undefined. The cost depends on whether Albert installs less than 2 panels, in which case he will pay $5000 less than \( C(2) \) per panel, or he installs more than 2 panels, in which case he will pay $6000 more than \( C(2) \) per panel.

\( C'(4) = 6000 \). So to install slightly more (respectively, less) than 4 panels costs $6000 more (respectively, less) than \( C(4) \) per panel.

(c) According to the co-coordinator, the 30% rebate happens first, then the DTE rebate.

\[ N(k) = 0.7C(k) - 2400k \]

(d) \( N_{10}(k) = N(k) - 1320k \)

(e) \( T_{10}(k) = N_{10}(k) - 1560k \)

(f) \[ 0 = \begin{cases} 
-1780k + 3500 & 0 < k \leq 2 \\
-1080k + 2100 & 2 < k 
\end{cases} \]

So for \( k \leq 2 \), it takes about 1.966 panels to break even. For \( k > 2 \), it would take about 1.944 panels, except then the \( k > 2 \) price would not apply. So it takes \( k \approx 1.966 \) panels to break even.