14/5

contains at least one point
Since we may apply this theory to any point of F.

not the same statement

- Each particle of dust contains exactly one point and F consists of singleton sets; $F=\bigcup_{x\in F}\{x\}$
If $y\notin F$ then there exists $\delta>0$ such that $|x-y|>\delta$ for all $x\in F$, then $y\in B_{\delta/2}(y)\subset\mathbb{R}^2-F$ and $B_{\delta/2}(y)$ is an open set $\Rightarrow \mathbb{R}^2-F$ is open $\therefore$ F is closed.

Quicker to do as mentioned on previous page

$\frac{6}{7}$

F is bounded & closed hence compact.

ii) F is closed. We must prove that every point of F is a limit point of F. Take any point x of F and take any $\delta>0$. Let k be such that $\delta > \frac{\sqrt{2}}{4^k}$, which is the

I think that you want equality here, from what follows

diameter of any of the 4^k sets at the stage k in the construction of F
Let S be the square at the stage k of construction, containing x and let $B_\delta(x)$ be the open ball centred at x.