1. I will always accept a well-drawn and well-explained diagram as a proof of a bijection. The simplest one here would be Fig A, but Fig B is ok too. Make sure you show that $A(n), B(n), C(n), D(n)$ are actually linear.

2. A and B were given as countably infinite sets. You cannot just say that $A = \{0, 1, 2, 3, 4, \ldots \}$ and $B = \{1, 3, 5, \ldots \}$ However, you can find a bijection between any countably infinite set and $\mathbb{N}$.

3. Several of you worked very hard in finding an exact formula for the location of $(m, n)$ in the enumeration. My intention was that a picture would be good enough. I appreciate your efforts.

4. Probably the simplest solution is at the top of the next column and works for both (a) and (b).

5. The style guide in induction is to start with what you know and finish with what you want. In this case, after the base is established, assume for $n$, $F_n^2 + F_{n+1}^2 = F_{n+1}F_{n+2} + F_{n+1}$ (known) $F_{n+1}(F_{n+2} + F_{n+1}) = F_{n+2}F_{n+3}$ (want).

6. There were several variations of what the proof should do, without actually doing them. See the solution for what I wanted.

7. This problem should be done purely as ordered pairs with the definition of addition and multiplication. The identification $(a, b) \leftrightarrow \frac{a}{b} \in \mathbb{A}$ is natural and does not make sense when $b = 0$. The point of the problem is that we can still make the definition on a set $\mathbb{A}$ with operations of $+$, $\cdot$ in a ring-like way.