(1) If $M \cap N = \emptyset$, then

$$\dim(M) + \dim(N) < \dim(E) + \dim(\overrightarrow{M} + \overrightarrow{N})$$

and

$$\dim(S) = \dim(M) + \dim(N) + 1 - \dim(\overrightarrow{M} \cap \overrightarrow{N}).$$

(2) If $M \cap N \neq \emptyset$, then

$$\dim(S) = \dim(M) + \dim(N) - \dim(M \cap N).$$

Proof. The proof is not difficult, using Proposition 24.16 and Proposition 24.15, but we leave it as an exercise. $\square$