The South Pole is a special point because it exists at $90^oS$ and also at *any* value for $E$ and $W$, because once we're at $90^oS$ we're already at the South Pole, and if we go East or West in any direction we're just just spinning around a point. This means for the South Pole in this question we just use $90^oS$,$153^oE$. Then the maths is easy.

$$90^o - 27^o = 63^o.$$

Then:

$$\frac{63}{360} \times 2\pi \times 6400 = 7037.16754404\cdots$$
$$= 7037 \text{ km (to the nearest kilometre)}.$$