

These integrals are complex, because

$$t^2 - 1 < 0 \text{ if } 0 < t < 1$$

You need to formulate S-C so  $1 - z^2$  arises, rather than  $z^2 - 1$ , just by renaming the arb. constant  $A$ .

Alternatively, you have to use about terms like  $(-1)^{3/4}$  <sup>multivalued complex no.</sup> which arises.