Inference at $*$ 2
of proof for Lemma order_split:

1. T : Type
2. R : $T \to T \to \mathbb{P}$
3. $\forall a{:}T.\ R(a,a)$
4. $\forall a, b, c{:}T.\ R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
5. $\forall x, y{:}T.\ R(x,y) \Rightarrow R(y,x) \Rightarrow (x = y)$
6. $\forall x, y{:}T.\ \mathrm{Dec}(x = y)$
7. a : T
8. b : T
9. $(R(a,b)\ \&\ (\neg R(b,a))) \vee (a = b)$

$\vdash R(a,b)$
by GenExRepD

1:

9. $R(a,b)$
10. $\neg R(b,a)$

$\vdash R(a,b)$

2:

9. $a = b$

$\vdash R(a,b)$

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