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

1. $a : \mathbb{Z}$
2. $b : \mathbb{Z}$
3. $((a > 0)\ \&\ (b > 0)) \vee ((a < 0)\ \&\ (b < 0))$

$\vdash (a * b) > 0$
by GenExRepD

1:

3. $a > 0$
4. $b > 0$

$\vdash (a * b) > 0$

2:

3. $a < 0$
4. $b < 0$

$\vdash (a * b) > 0$

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