

HW4

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1. For union This means that the language accepted by the turring machine is just a subset of a language that is already accepted. To biuld a turring machine I would just use double sided tape and would take a string from both languages that are unioned and put one on each side of the tape. I would then takes turns with the algorithm on each perspective language on both sides of the tape. If both sides of the tape are accepted then the language is valid.

Here is a small example of what the tape could look like. Where a_n is from one language and b_n is from another.

#	a1	a2	a3	an	#
#	b1	b2	b3	bn	#

For intersection I will still be using two sides of the tape but in this case if either side is accepted then the whole thing is accepted.

#	a1	a2	a3	an	#
#	b1	b2	b3	bn	#

For reversal I would simply copy the input from one side of the tape to the other in reverse order. I would then have the original accepts either side of the tape we know it is accepting.