Before stating this ER, review the (linked) Symbolically Write Guidelines, which is also posted on the course homework page. It will answer many of the questions you might otherwise have.

►. Consider the following statement.

$$(\exists x \in \mathbb{Q}) \left[\sqrt{2} < x < \sqrt{3} \right]. \qquad (*)$$

1. Write the statement in $(*)$ as an English sentence that does not use the quantifier symbols (e.g.: $\forall$, $\exists$).
⟨Hint. See (linked) Writing Guidelines number 12 to see that it is fine to use symbols such as: $+$. $=$, $<$.⟩
2. Symbolically write an equivalent formualation of the statement in $(*)$ as to have an $\wedge$ connective and 2 separate inequalities. Hint: see the Symbolically Write Guidelines (3).
3. Symbolically write the negation of the statement in $(*)$ without using the negation symbol (i.e. $\sim$ or $\neg$).
4. Write a useful negation of the statement in $(*)$ as an English sentence that does not use quantifier symbols. (You may use math symbols that are not quantifiers.)

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DELETE this whole sentence and THEN put your answer to ALL parts down here.