Explorations and Activities Exercise

►. Let:

- $\bullet$  P be a true statement
- $\bullet$  Q be a true statement

and

- $\bullet$  U be false statement
- $\bullet$  V be false statement

and

ullet W be a statement but it is not known if W is true or false.

Which of the following statements are true, which are false, and for which statements is it not possible to determine if it is true or false? Justify your conclusions (of course using complete sentences).

- 1.  $P \wedge (W \implies Q)$
- 2.  $W \implies (P \wedge U)$
- 3.  $(P \lor W) \implies (U \land W)$

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