Understand what makes an argument valid and how it becomes a proof

Key knowledge | Free preview

Learning target: Understand what makes an argument valid and how it becomes a proof.

A truth table checks every possible assignment to a finite set of propositions. An implication fails only when its premise is true and its conclusion false. A valid argument cannot have all premises true and its conclusion false. Karnaugh maps organise the same truth values to reveal simplifications.

Try the mathematics

Task 1. For rows (p,q)=(T,T),(T,F),(F,T),(F,F), give p⇒q and q⇒p. Is the argument p⇒q; q; therefore p valid?

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/sm-u1-o1-kk-11/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 1; Outcome 1; Key knowledge; bullet 11; p. 61.

The learning target is a concise paraphrase. Aspire reference: sm-u1-o1-kk-11. This is an internal identifier, not an official VCAA code.

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