Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

help: historians know what happened next, so they can see long-term causes and results; problem: they may see events as inevitable and judge people by what those people could not know

2.2

$(2a + 1) + (2b + 1) = 2a + 2b + 2 = 2(a + b + 1)$, which is even; it follows by deduction from definitions, so it holds for all cases; a scientific law rests on finite observations and could be revised

2.3

any two, explained: different sources or new sources found; different perspectives, e.g. national, political, class; different questions and focus, e.g. economic vs political causes; different times of writing: each generation asks new questions

2.4

a named work in context, e.g. Guernica (1937) after the bombing of Guernica; for: it shows what violence against civilians means, knowledge by acquaintance; it shapes how people understand events; against: it does not give facts or testable claims; interpretations differ; a reasoned judgement about kinds of knowledge

3.1

Mark with the TOK markbands (out of 10): [9-10] excellent: clear, focused, convincing links, well-chosen examples, implications explored; [7-8] good: focused, mostly clear links, relevant examples; [5-6] satisfactory: some focus, links partly explained; [3-4] basic: limited links, description more than analysis; [1-2] rudimentary. Points that may be included: understanding of certainty and interpretation; mathematics: proof from axioms gives certainty within a system; limits: choice of axioms; Gödel's incompleteness; history: interpretation of sources; perspectives; history also has well-established facts and methods of checking; a balanced conclusion

3.2

Euclid's parallel postulate was assumed to be obviously true; mathematicians replaced it and built consistent new geometries; so axioms are chosen, not simply given by reality; non-Euclidean geometry later described space in general relativity; knowledge question, e.g. "Is mathematics discovered or invented?"

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