Lesson 1.1 Practice: Euclid's Elements and the Axiomatic Method

School Launch · Geometry · Unit 1: Foundations: Logic and the Axiomatic Method · Worksheet A

Calculator allowed

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. Use inductive reasoning: the pattern begins $7, 14, 28, 56, \ldots$ Predict term 6. EASY

2. Given: If a number is divisible by 5, it is a multiple of 5. 10 is divisible by 5. What can you conclude, and which law is used? EASY

3. Use inductive reasoning: the pattern begins $1, 2, 4, 8, \ldots$ Predict term 6. EASY

4. Given: If p, then q. If q, then r. Use the Law of Syllogism to write the conclusion, then test it with p: "$x = 5$", q: "$2x = 10$", r: "$2x + 1 = 11$". MEDIUM

5. Use inductive reasoning: the pattern begins $1, 2, 4, 8, \ldots$ Predict term 13 and describe the rule. MEDIUM

6. Given: If p, then q. If q, then r. Use the Law of Syllogism to write the conclusion, then test it with p: "$x = 9$", q: "$2x = 18$", r: "$2x + 1 = 19$". MEDIUM

7. Use inductive reasoning: the pattern begins $36, 49, 64, 81, \ldots$ Predict term 13 and describe the rule. MEDIUM

8. Given: If p, then q. If q, then r. Use the Law of Syllogism to write the conclusion, then test it with p: "$x = 7$", q: "$2x = 14$", r: "$2x + 1 = 15$". HARD

9. Use inductive reasoning: the pattern begins $10, 15, 21, 28, \ldots$ Predict term 10 and describe the rule. HARD

10. Given: If p, then q. If q, then r. Use the Law of Syllogism to write the conclusion, then test it with p: "$x = 8$", q: "$2x = 16$", r: "$2x + 1 = 17$". HARD