

2.2 Inductive and Deductive Reasoning CYU

Use when you get it right all by yourself

S *Use when you did it all by yourself, but made a silly mistake*

H *Use when you could do it alone with a little help from teacher or peer*

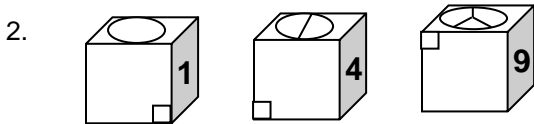
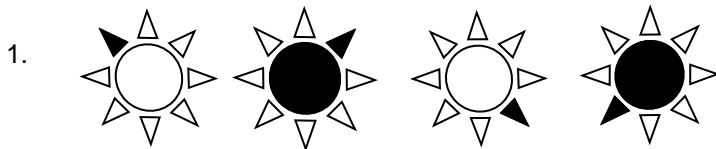
G *Use when you completed the problem in a group*

X *Use when a question was attempted but wrong (get help)*

N *Use when a question was not even attempted*

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Inductive Reasoning	1, 2, 13	3, 4, 10 - 12	5, 6
Deductive Reasoning	7 - 9, 14	10 - 12	
Conjecture	1, 2	3 - 6	15 - 16
Counterexample		17 - 18	

1 – 2: Use inductive reasoning to draw the next picture.



3 – 4: Use inductive reasoning to find the next two terms.

3. 5, 6, 8, 11, 15, _____, _____

4. 1, 3, 4, 7, 11, 18, _____, _____

5 – 6: Do the following.

5. Write the equation that the pattern indicates should come next.

$$1 \times 9 + 2 = 11$$

$$12 \times 9 + 3 = 111$$

$$123 \times 9 + 4 = 1111$$

6. Every day for the past 5 days, we learned and had fun in Geometry. Make a conjecture.

7– 9: Use deductive reasoning to solve the following.

7. If the temperature falls below 32 degrees, then it is a fact that water will freeze. The temperature today was 19 degrees. Will the water freeze?

8. Jan is older than Carol, but Jan is younger than Lee. Who is the oldest of the three?

9. Joe, John, and Jerry are friends. One is a teacher, one is a doctor, and one is a lawyer. John hired the lawyer to look into a business venture with him. Joe invited the doctor and his wife over for dinner but did not invite John. Jerry says he does not have the patience to be a teacher. State the occupation of each friend.

10– 12: Tell whether the reasoning process used is deductive, inductive, or neither.

10. After picking marigolds for the first time, Connie began to sneeze. She also began sneezing the next four times she was near marigolds. Connie reasons that she is allergic to marigolds.

11. Walking down the street one sunny afternoon, Laura concludes that it is going to be a great day.

12. By using the definition of an equilateral triangle (a triangle with 3 congruent sides) and of perimeter (the sum of the lengths of the sides of a figure), Katie concludes that the perimeter of every equilateral triangle is three times the length of a side.

13 – 14: Fill in the blank.

13. Conclusions based on accepted true statements come from _____ reasoning.

14. Conclusions based on several past observations come from _____ reasoning.

15 – 16: Make and test a conjecture about the given quantity.

15. the product of any two even integers.

16. the quotient of a number and its reciprocal.

17 – 18: Find a counterexample to show that the conjecture is false.

17. The product of two positive numbers is always greater than either number.

18. If two angles are supplements of each other, then one of the angles must be acute.

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

