Name Key Date _____ Pd __

CYU 2.1 Conditional Statements

☑ *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
Hypothesis & Conclusion	1		
Conditional Statement: "if-then" form	2		9
Negation (~)	3	4	
Converse, Inverse, & Contrapositive	5a	5b	
Truth Value	5a	5b	
Spiral Review	10a	10b	6
Biconditional statements: iff : if and only if		7	8

1. Underline the hypothesis and circle the conclusion in the conditional statement provided. **If a polygon is a pentagon, then it has five sides.**

2. Rewrite the statement into if-then conditional form. **$9x + 5 = 23$, because $x = 2$.**

   If $x=2$, $\Rightarrow 9x+5=23$.

3. Write the negation of the statement: **The lake is cold.**

   The lake is not cold

4. Write the negation of the statement: **The dog is *not* a lab.**

   The dog is a lab

5. **Write the conditional statement in if-then form. Then write the converse, inverse, and contrapositive. Then decide the truth value of each statement you write.**

   a. Let p be **"you do your math homework"** and q be **"you will do well on the test."**

False → Conditional: If you do your homework, then you will do well on the test.

False → Converse: If you do well on your test, then you did your math homework.

False → Inverse: If you do not do your math homework ⇒ you will not do well on the test.

False → Contrapositive: If you do not do well on the test, then you did not do your homework.

b. Let p be **"you are not an only child"** and q be **"you have a sibling."**

True → Conditional: If you are not an only child, then you have a sibling.
True → converse: If you have a sibling, then you are not an only child.
True → Inverse: If you are an only child, then you do not have a sibling.
True → Contrapositive: If you do not have a sibling, then you are an only child.

6. Decide whether the statement about the diagram is true. Explain your answer using definitions you have learned. M is the midpoint of $\overline{AB}$.

False, there are no tic marks on $\overline{AM}$ & $\overline{MB}$ showing Congruence.

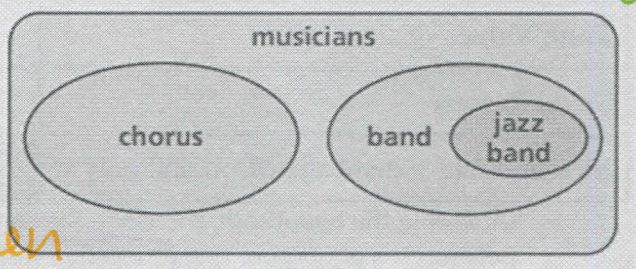
7. Rewrite the conditional & converse statements as a single biconditional statement: **If a polygon has three sides, then it is a triangle. If a polygon is a triangle then it has three sides.**

A polygon has three sides iff it is a triangle.

8. Rewrite the conditional & converse statements as a single biconditional statement: **If an angle is obtuse, then it has a measure between 90° and 180°. If an angle has a measure between 90° and 180°, then it is obtuse.**

An angle has a measure between 90° & 180° iff it is obtuse.

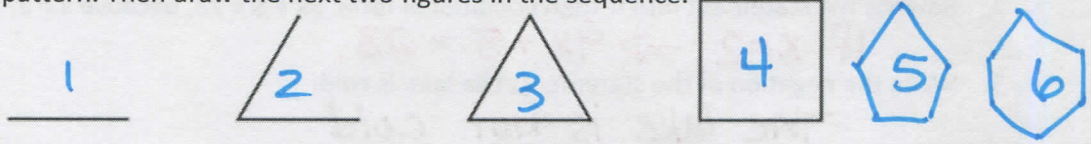
9. The Venn diagram represents all the musicians at a high school. Write three conditional statements in if-then form describing the relationships between the various groups of musicians.



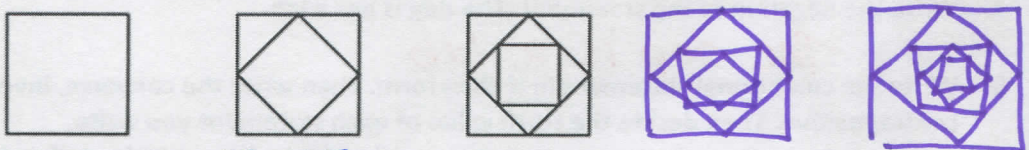
answers may vary.
If a student is in jazz band, then the student is in the band.

10. Find the pattern. Then draw the next two figures in the sequence.

a.



b.



c. 12, 23, 34, 45, ... 56 67
+11 +11 +11 +11 +11

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.