Grade 8 Bilingual math worksheet1: **proof** Name: _____ Score:_____

1. Give the definition for each of the following

(1) Square:

(2) Algebraic fraction:

(3) Obtuse angle:

2. In the following, which ones are statements? If it is, whether it is True or False?

(1) Panda has no wings.

(2) Animals need water.

(3) Monkey is one of animals.

(4) Rose is an animals.

(5) Beautiful sky.

(6) What is the weather tomorrow?

(7) Draw a line which bisect $\angle AOC$.

(8) If x=1, then 2x=3.

(9) The four edges of a rectangle are equal.

3. Find the condition and conclusion for each of the statement.

(1) Two triangles with two equal angles are similar.

(2) Two intersection line has one intersection point.

(3) Two right angles are equal.

(4) If $\frac{x-5}{2} > \frac{3-x}{3}$, then $x < 4$

(5) If $a \neq 0, b \neq 0$, then $a^2 + ab + b^2 = (a + b)^2$.

4. Determine the statement is True of False. If it is false, give one counter example.

(1) If $ab > 0$, then $a > 0, b > 0$

(2) If $ab = 0$, then $a = 0$

(3) In $\triangle ABC$, if $AB = 3, BC = 2, AC = \sqrt{13}$, then $\triangle ABC$ is a right angled triangle.

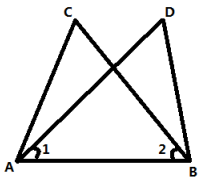
(4) If $x > 3$, then $x > 2$.

(5) If $a > b$, then $a^2 > b^2$

5. Observe that $\frac{2}{1} \times 2 = \frac{2}{1} + 2, \frac{3}{2} \times 3 = \frac{3}{2} + 3, \frac{4}{3} \times 4 = \frac{4}{3} + 4, \frac{5}{4} \times 5 = \frac{5}{4} + 5$. If n means positive integer, use n to write down a statement:_____. Can you show the statement is true of false?

6. We have a statement "if n is positive integer, then $n^2 + n + 11$ is a prime number". Is this a true statement? If not, give a counterexample.

7. As in the graph, in $\triangle ABC$ and $\triangle ABD$, we have three conclusion
(1) AD=BC (2) $\angle C = \angle D$ (3) $\angle 1 = \angle 2$
Choose two of them as condition, the other one as conclusion, write down a true statement.



8. In a survey class, we found the following table

n	2	3	4	5	$\cdots$
a	$2^2 - 1$	$3^2 - 1$	$4^2 - 1$	$5^2 - 1$	$\cdots$
b	4	6	8	10	$\cdots$
c	$2^2 + 1$	$3^2 + 1$	$4^2 + 1$	$5^2 + 1$	$\cdots$

(1) Observe the relationship between a,b,c and n, use an expression to represent :

$a =$ _____, $b =$ _____, $c =$ _____

(2) Statement: a triangle with a,b,c as its edges is a right angled triangle. Tell whether it is true or false.If it is true, prove it; if it is false, give one counter example.