**KIGALI CITY ON 30th,June , 2020**

**MINEDUC/KICUKIRO DISTRICT**

**E.S KANOMBE/EFOTEC**

**CLASS: S4 MPC, MCB, PCM & MEG**

 **EXERCISES OF MATHEMATICS**

**1.** simplify the following: a)$\left(\frac{1}{tanx}+\frac{1}{cotx}\right)\sin(x)\cos(x)$

 b)$sec^{4}a\left(1-sin^{4}a\right)-2tan^{2}a$

**2**. Find the length of side BC of triangle ABC in which AB=7mc, AC=9cm and $<$ BAC=710

**3.**a) An airplane flies on a course of S300E for 150km. How far South is the plane from where it originated?

 b) An airplane is flying at a height of 2 km above the level ground, the angle of depression from the plane to the foot of a tree is 150. Find the that airplane must fly to be directly above the tree.

**4**. Write the truth table for $¬(p⋀q)⋁(p⋁q)$

**5.** Solve in IR a) Ix+3I-2=6

 b) $x^{6}-7x^{3}+6=0$

 c) $\frac{3x+6}{-x-1}>6$

 d) $\frac{x^{2}+1}{x-1}\leq 0$

**6**. Rationalize: a)$\frac{3\sqrt{5}+\sqrt{2}}{2\sqrt{7}}$ b) $\frac{\sqrt{3}+\sqrt{2}}{\sqrt{2}+\sqrt{5}}$

**7**.Write the following statements in symbolic form:

a) If Peter takes English and Karangwa takes Biology then I will take Mathematics .

b)If either John eats rice meat then Kalisa will eat potatoes.

**8.**Determine whether:a)(IN,+) is a group

 b) (Q ,+) is an abelian group

 c) (Q ,+,•) is a ring

 **END**