**DESTINY SECONDARY SCHOOL**

S.3 MATHEMATICS

TIME: 2 HOURS 30 MINUTES

INSTRUCTIONS: ATTEMPT ALL QUESTIONS IN SECTION A AND 4 IN SECTION B

1. Simplify 3 X 10-3 X (6 X100)2 and give your answer in standard form.

80

1. If 4X X 2Y =2P Express P in terms of X and Y

2X+2Y

1. Express -2.1243131……. as a fraction.
2. Reagan’s farm is seated on a piece of land whose are is 5.6 km2. What is the area of this farm in cm2 if it is to be represented on a village map of scale 1:40,000?
3. The line 5x – 2y = 15 meets the x-axis at point P and Y-axis at point Q. Find the co-ordinates of P and Q.
4. Ronald bought a circular pizza of radius 14 cm from a supermarket. He gave to his friend a potion of 60%. Calculate the area of the pizza he remained with.
5. Factorize 5a2c +3b2d – 5cb2 – 3a2d.
6. Determine the range corresponding to the domine {{-3, -2, 0, 1, 3, 4} for the mapping x x2 + 1 and represent it on an arrow diagram.
7. Three girls Amara, Asiimwe and Nakato shared shs 10,500. Nakato got twice as much as Asiimwe and Asiimwe got twice as much as Amara. Find how much money Asiimwe got.
8. Find the number such that if its square is subtracted seven times from the number, the result is 6.

**SECTION B**

1. Richard invited 100 of his classmates to his birthday party. 50 students ate matooke(m). 50 ate Irish (I) while 40 ate rice(R).Of these students 15 ate both matooke and Irish only, 15 ate matooke and rice only while 25 ate Irish and rice only. Some students ate all the three types of food which made 10 students to miss eating.
   1. Help Richard determine the number of students who ate;
      1. All the three foods
      2. Only one type of food
      3. At most two types of food
   2. If a student is picked at random, find the probability that a student chosen ate only one type of food.
2. Rose has a bucket with height of 50cm and radii of 30cm and 20cm respectively. If she uses two full buckets every day. How many litres of water does she use in a day. (use π as 3.14 )
   1. Tom a welder wants to make the same bucket from a simple metal. Help him calculate the area of the metal he should use.
3. Jamari a pilot of Uganda Airways flies 5400km from Entebbe Airport to Jomo Airport on a bearing of 0600. From Jomo Airport, he the flies 4650km to Dodoma Airport on a bearing of 1500. From Dodoma Airport, he flies to Kabalega Airport 3600km away on a bearing of 2650.
4. Using a scale of 1cm: 500km, draw a scale drawing to show the route of mr.Jamari.
5. From your diagram, determine the distance and bearing of Entebbe Airport from Dodoma Airport.
6. Determine how long it would take a plane travelling at a speed of 400km/hr to fly from Entebbe to Jomo Airport.
7. A house plan is drafted using a computer. As the engineer was checking through it, he found out that the ground floor had two parallel lines one having an equation of 3x+2y=8 and the other with points A (3,2k) and B (k, 4). When he moved to the second floor, he also realized that the line ax+3y=7 is perpendicular to the line with points P (a, 3b) to Q (2b, a) having a midpoint of (1, 2). Determine the value of a and K.
8. A graphic designer was given a task of making a logo for a cake making company. As he was finalizing, he decided to include there a triangular cake of coordinates A (-4, 2) B (0, 2) and C (-2, 6).He decided to rotate it through a negative quarter turn to see whether the image of ABC can make a logo look better than the object. After rotating it getting the images A’B’C’, A friend advised him to translate the image using vector (-2-3) in order for the logo to be more impressive.
9. State the coordinates of the first and second image of the triangular cake.
10. How many lines of symmetry does the final image has.
11. The dimensions of a rectangle are 60cm by 45cm. If the length and width are each reduced 10%. Calculate the percentage decrease into area.

b). A container has a volume of 6400cm2 and a surface area of 800cm2. Find the surface area of a similar container which has a volume of 2700cm2

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