RATE, RATIO AND PROPORTION

	KCSE 1989 – 2012 Form 1 Mathematics *Answer all the questions*
1.	**1989 Q11 P1** Three businessmen Makokha, Njau and Odhiambo contributed a total amount of sh 120,000 to start a business. The ratio of the contributions of Makokha and Njau was 2:3 and that of Njau to Odhiambo was 2:5. How much did Odhiambo contribute? (3 marks)
2.	**1989 Q17 P2** Water flows through a circular pipe of cross-section area 6.16cm^2 at a uniform speed of 10cm per second. At 6 a.m, water starts flowing through the pipe into an empty rectangular tank of base area 3m^2. (a) What is the depth of the water in the tank at 8.30 a.m? (3marks) (b) If the tank is 1.2 meters high and has a hole at the bottom through which water leaks at the rate of 11.6 cm3 per second, determine the time at which the tank will be filled. (4marks)
3.	**1990 Q6 P2** Three juakali artisans Nyundo, Karai and Moto, invested sh 1200, sh1,800 and sh 3000 respectively in their business. They agreed that 34% of the profits would be divided equally among among them, and the ratio of their investments. How much did Nyundo receive at the end of one year when the total profit realized was sh 15,000? (4marks)
4.	**1991 Q17 P1** Two business partners Nzau and Masese contributed sh.112,000 and sh 128,000 Respectively, to start a business. They agree to share their profits as follows; 30% to be shared equally 30% to be shared in the ratio of their contributions 40% to be retained for the running of the business. If their total profit for the year 1989 was sh.86400 calculate (i) The amount received by each partner (6marks) (ii) The amount retained for running the business (2marks)
5.	**1991 Q5 P2** Kamau , Chelule and Wekesa are three casual in a juakali Enterprise. Chelule earns twice as much as Kamau and Wekesa earns sh 70 more than Chelule. If their total earnings are sh1, 120 express the ratio of their earnings, Kamau: Chelule: Wekesa in its simplest form. (3marks)
6.	**1993 Q5 P1** It takes 30 workers 6 days working 8 hours a day to harvest maize in a farm. How many days would 50 workers working 6 hours a day take to harvest the maze? (2marks)

7.	**1994 Q8 P1** A pool of water with surface area of 0.6ha has a uniform depth of 3m. A pipe drains the pool at the rate of 200 litres per second. How many hours does it take to empty the pool? (3marks)
8.	**1994 Q9 P1** Three business partners, Kioko Njau and Osiako, are to share 12,000 in the ratio 5:6:x respectively. If Kioko received sh 4000, determine the value of x (3marks)
9.	**1995 Q 13 P1** Water flows from a tap. At the rate 27cm^3 per second, into a rectangular container of length 60cm, breath 30 cm and height 40 cm. If at 6.00 p.m. the container was half full, what will be the height of water at 6.04 pm? (3 marks)
10.	**1996 Q 8 P1** A rectangular tank of base 2.4 m by 2.8 m and a height of 3m contains 3,600 liters of water initially. Water flows into the tank at the rate of 0.5 litres per second. Calculate the time in hours and minutes, required to fill the tank (4 marks)
11.	**2000 Q 7 P2** Akinyi, Bundi, Cura, and Diba invested some money on a business in the ratio of 7: 9:10:14 respectively. The business realized a profit of Kshs 46,800. They shared 12% of the profit equally and the remainder in the ratio of their contributions.Calculate the total amount received by Diba
12.	**2002 Q 12 P2** Atieno and Kamau started a business by contributing sh.25000 and sh.20, 000 respectively. At the end of the year, they realized a profit of shs. 81,000. The profit was allocated to development, dividends and reserves in the ratio 4:5:6 respectively. The dividends were the shared in the ratio of their contribution. Calculate the dividends paid to Atieno.
13.	**2003 Q 14 P2** Three business partners Atieno, Wambui and Mueni contributed sh 50,000, Sh.40,000 as sh 25,000 respectively to start a business. After some time, they realized a profit, which they decided to share in the ration of their contributions. If Mueni's share was sh 10.000, by how much was Atieno's share more than Wambui's? (3mks)
14.	**2004 Q10 P2** A group of 5 people can do a piece of work in 6 hours. Calculate the time a group of 8 people working at half the rate of the first group would take to complete the same work.
15.	**2005 Q3 P2** In a fund- raising committee of 45 people, the ratio of men to women is 7: 2. Find the number of women required to join the existing committee so that the ratio of men to women is changed to 5: 4 (3 marks)

16.	**2009 Q15 P1** Abdi sold a radio costing ksh 3,800 at a profit of 20%.He earned a commission of 22 ½ % on the profit. Find the amount he earned. (2 marks)
17.	**2009 Q1 P2** A farmer feeds every two cows on 480 kg of hay for four days. The farmer has 20160 of hay which is just enough to feed his cows for 6 weeks. Find the number of cows in the farm (3marks)
18.	**2010 Q6 P2** Five people can build 3 huts in 21 days. Find the number of people, working at the same rate that will build 6 similar huts in 15 days. (2 marks)
19.	**2012 Q16 P1** Bukra had two bags A and B, containing sugar. If he took 2kg of sugar from bag A and added it to bag B, the mass of sugar in bag B would be four times the mass of the sugar in bag A. If he added 10kg of sugar to the original amount of sugar in each bag, the mass of sugar in bag B would twice the mass of the sugar in bag A. Calculate the original mass of sugar in each bag. (3marks)
20.	**2012 Q19 P1** Two alloys, A and B, are each made up of copper, Zinc and Tin. In Alloy A, the ratio of copper to zinc is 3:2 and the ratio of zinc tin is 3:5. (a) Determine the ratio, copper : zinc : tin in alloy A (2marks) (b) The mass of alloy A is 250kg. Alloy B has the same mass as alloy A but the amount of copper is 30% less than that of alloy A. Calculate: (i) The mass of tin in alloy A (2marks) (ii) The total mass of zinc and tin in alloy B (3marks) (c) Given that the ratio of zinc to tin in alloy B is 3:8, determine the amount of tin in alloy B than in alloy A. (3marks)