KCSE COMMERCIAL ARITHMETICS 1

REVISION QUESTIONS

QUESTION 1

Kering purchased $(2x-1)$ identical pens for Ksh 180. Naraya purchased $(3x+1)$ identical pencils for Ksh 200.

(a) Write an expression for the:

(i) price of one pen; (1 mark)

(ii) price of one pencil. (1 mark)

(b) A pen costs Ksh 4 more than a pencil.

Form an equation to represent the information above and hence solve for x. (4 marks)

(c) Later the price of a pen went up by 25% while that of a pencil remained unchanged. A school spent the same amount of money on the purchase of pens as that spent on pencils. The total number of both pens and pencils bought was 46.

Determine the number of pens bought by the school. (4 marks)

QUESTION 2

A Kenyan Non-Governmental Organization (NGO) received a donation of 200 000 US dollars. The money was converted into Kenyan shillings in a bank which buys and sells foreign currency as follows:

	Buying (Ksh)	**Selling (Ksh)**
1 US Dollar	102.40	102.50
100 Japanese Yen	92.80	93.30

(a) Calculate the amount of money, in Kenya Shillings, the NGO received. (1 mark)

(b) The NGO used 90% of the donation to buy a machine from Japan. Calculate the cost of the machine to the nearest Japanese Yen. (3 marks)

QUESTION 3

A salesman earns a basic salary of Kshs. 9,000 per month In addition he is also paid a commission of 5% for sales above Kshs 15,000 In a certain month he sold goods worth Kshs. 120,000 at a discount of 2 ½ %

Calculate his total earnings that month (3 marks)

QUESTION 4

A Kenyan company received US Dollars 100 000. The money was converted into Kenya shillings in a bank which buys and sells foreign currencies as follows:

	Buying (in Kenya shillings)	Selling (in Kenya shillings)
1 US Dollar	77.24	77.44
1 Sterling Pound	121.93	122.27

(a) calculate the amount of money, in Kenya shillings, the company received.

(b) The company exchanged the Kenya shillings calculated in (a) above, into sterling pounds to buy a car from Britain. Calculate the cost of the car to the nearest sterling pound.

QUESTION 5

A Kenyan tourist left Germany for Kenya through Switzerland. While in Switzerland he bought a watch worth 52 Deutsche Marks. Find the value of the watch in:

(a) Swiss Francs.

(b) Kenya Shillings

Use the exchange rates below:

1 Swiss Franc = 1.28 Deutsche Marks.

1 Swiss Franc = 45.21 Kenya Shillings

COMMERCIAL ARITHMETICS 1

MARKING SCHEME

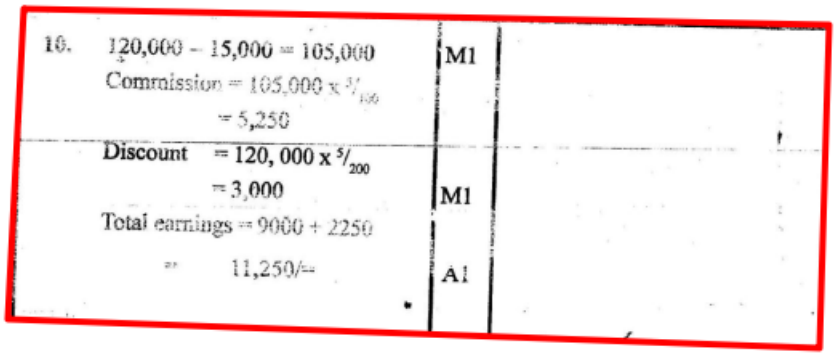
QUESTION 1

No.	Marking scheme	Marks	Comments
19.	(a)(i) Price of a pen $= \frac{180}{2x-1}$	B1	
	(ii) Price of a pencil $= \frac{200}{3x+1}$	B1	
	(b) $\frac{180}{2x-1} - \frac{200}{3x+1} = 4$	M1	
	$180(3x+1) - 200(2x-1) = 4(2x-1)(3x+1)$		
	$(2x-1)(3x+1) = 45(3x+1) - 50(2x-1)$		
	$6x^2 - x - 1 = 35x + 95$	M1	
	$6x^2 - 36x - 96 = 0$		
	$x^2 - 6x - 16 = 0$		
	$(x+2)(x-8) = 0$	M1	
	$x = -2$ or $x = 8$		
	$x = 8$	A1	
	(c) New price of a pen $= \frac{125}{100} \times \left(\frac{180}{16-1}\right)$		
	$=$ Ksh 15	B1	
	Price of pencil $= \frac{200}{25} =$ Ksh 8	B1	
	Let number of pens be p		
	$\therefore 15p = 8(46 - p)$	M1	
	$15p + 8p = 8 \times 46$		
	$23p = 8 \times 46$		
	$p = \frac{8 \times 46}{23} = 16$	A1	
		10	

QUESTION 2

(a) Amount received by NGO (In Ksh) $= 200000 \times 102.40 = \text{Ksh } 20\,480\,000$	B1
(b) Cost of machine (Ksh) $= \frac{90}{100} \times 20480000$ $= 18\,432\,000$	M1
Cost of machine (JY) $= \frac{18\,432\,000}{93.30} \times 100$	M1
$= 19\,755\,627$ JY.	A1
	4

QUESTION 3



10. 120,000 – 15,000 = 105,000 Commission = 105,000 x 5/100 = 5,250	M1
Discount = 120, 000 x 5/200 = 3,000	M1
Total earnings = 9000 + 2250 = 11,250/=	A1

QUESTION 4

(a)	Sh. 77.24 x 100,000 = sh. 7 724 000
(b)	$\frac{Sh..77.24 \times 100000}{122.27}$ = Sh. 63 172

QUESTION 5

7. (a) Swiss francs 52/1.28 = 40.63	B1
(b) Kshs '40.63' x 45.21 = 1837	A1