MKALAMA DISTRICT COUNCIL
FORM ONE TERMINAL EXAM.
BASIC MATHEMATICS
MARKING SCHEME.

1. (a) Branches of mathematics
   i) Algebra
   ii) Geometry
   iii) Arithmetic (05 marks)

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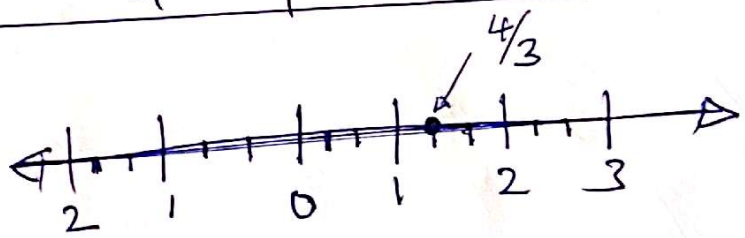
(b) Activities that involves use of mathematics concepts in Geography are
   (i) Measuring of distance between two points on a map.
   (ii) Measuring of height of mountains
   (iii) Calculation of surface area on a map (05 marks)

2. (a)



(05marks)

(b) 1·5 or $1\frac{1}{2}$ or $\frac{3}{2}$ (05 marks)

3. (a) i) $a > c$ (2.5 marks)
   ii) $a > c$ (2.5 marks)

CamScanner

3. (b) Given $\frac{1}{4}$ and $\frac{3}{7}$

LCM of 4 and 7 is 28.

$\frac{1}{4} \times 28 = 7$

$\frac{3}{7} \times 28 = 3 \times 4 = 12$

$\therefore \frac{3}{7}$ is greater than $\frac{1}{4}$ (0.5 marks)

4. (a) Irrational numbers are (1 mark each.)

$\frac{\sqrt{2}}{2}$, π, $\sqrt{3}$, $\frac{\pi}{4}$ and $\frac{-\sqrt{5}}{3}$ (05 marks)

(b) Equivalent rational numbers are

0.75, $\frac{6}{8}$, $\frac{9}{12}$, $\frac{12}{16}$, $\frac{15}{20}$, etc. (05 marks)

(1 mark each)

5. (a) i) 0.3

ii) 18

iii) 64000

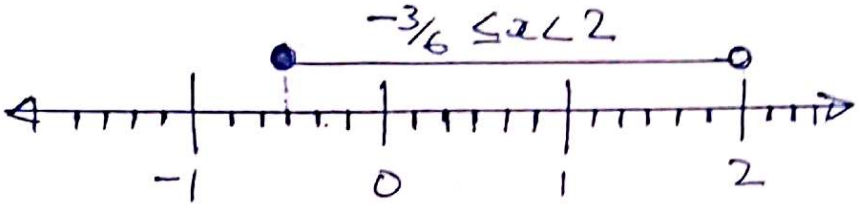
} 05 marks

(b) $0.3143 \times 6.06 = 1.904658$

≈ 1.905

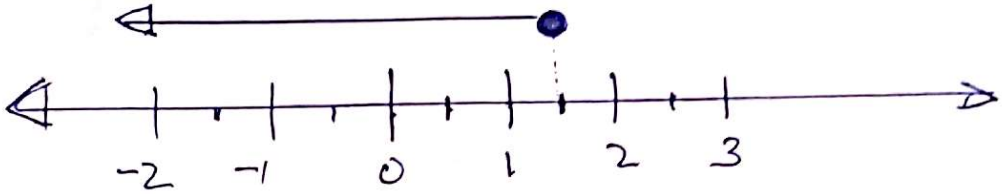
} 05 marks

6. (a) $-\frac{3}{6} \leq x < 2$



(5 marks)

(b) $x \leq \frac{3}{2}$



(5 marks)

7. (a) $2.\dot{3} + 0.\dot{3} - 2.\dot{4}$

$= (2.333\ldots + 0.333\ldots) - (2.444\ldots)$

$= (2.666\ldots) - (2.444\ldots)$

$= 0.222\ldots$

(02 1/2 marks)

Let $x = 0.222\ldots$ ... (i)

$10x = 2.222\ldots$ ... (ii)

$10x - x = 2.222 - 0.222$

$\frac{9x}{9} = \frac{2}{9}$

$x = 2/9.$

(02 marks)

$\therefore 2.\dot{3} + 0.\dot{3} - 2.\dot{4} = \frac{2}{9}$

(00 1/2 marks)

7 (b) i) $3\overline{)1}$ $0.33\ldots$

$\begin{array}{r} 0 \\ \hline 10 \\ -9 \\ \hline 10 \\ 9 \\ \hline 1 \end{array}$

$\therefore \frac{1}{3} = 0.\dot{3}$

(02 $\frac{1}{2}$ marks)

ii) $1\frac{5}{9} = \frac{14}{9}$

$9\overline{)14}$ $1.55\ldots$

$\begin{array}{r} -9 \\ \hline 50 \\ -45 \\ \hline 50 \\ -45 \\ \hline 5 \end{array}$

$\therefore 1\frac{5}{9} = 1.555\ldots = 1.\dot{5}$

02 $\frac{1}{2}$ marks

8. (a) Absolute value of $\frac{1}{4} + \frac{1}{2} - 2$

$= \left|\frac{1}{4} + \frac{1}{2} - 2\right|$

$= \left|\frac{1+2}{4} - 2\right|$

01 marks

(8)(a) $= \left|\frac{3}{4} - \frac{2}{1}\right|$ ——— (0 mark)

$= \left|\frac{3-8}{4}\right|$ ——— (01 mark)

$= \left|\frac{-5}{4}\right|$ ——— (01 mark)

$= \frac{5}{4}$ ——— (01 mark)

∴ The absolute value of $\frac{1}{4} + \frac{1}{2} - 2$ is $\frac{5}{4}$

(b) $|3-5| + |12 \div 3| - 5 \times 2$

$= |-2| + |4| - 5 \times 2$ ——— 02 marks

$= 2 + 4 - 10$ ——— 01 marks

$= 6 - 10$ ——— 01 mark

$= -4$ ——— 01 mark

9 (a) Monthly salary = 270,000

food = $\frac{2}{3} \times 270,000 = 180000$ ---- (01 mark)

Pair of shoes = $\frac{1}{2}(270,000 - 180000)$ ---- (02 marks)

$= \frac{1}{2} \times 90,000$

$= 45000$ ---------- 01 mark

∴ Tsh. 45000 was used to buy pair of shoes. ---------- (01 mark)

(b) Fraction of salary used to buy food

$= \frac{45,000}{270,000}$ } (02 marks)

$= \frac{1}{6}$

$6 \overline{)1.000\ldots}$ = 0.166...

-0

10

-6

40

-36

40

-36

4

(02 marks)

(5) Fraction in decimal is $0.1\dot{6}$ — (01 marks)

6. Number of bottles = 12
Cost of one bottle = 600 shillings
Total cost = 12×600
= 7200 shillings } 03 marks

Number of people = (Amina + 3 friends)
= 4 + 3 } 02 marks
= 4.

Amount each person paid
= $\frac{7200 \text{ shillings}}{4}$ -- 03 marks
= 1800 shilling -- 01 marks

∴ Each person paid 1800 shillings. 01 mar