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SET 2

GRADE 10 END OF YEAR EXAMS

KENYA CERTIFICATE OF BASIC EDUCATION

SENIOR SCHOOL ASSESSMENT

GRADE 10 – ESSENTIAL MATHEMATICS 006 JUNE

Time: 2 Hours

LEARNER'S DETAILS

Name: _____. **School:** _____.

Assessment Number: _____. **Date:** _____.

School Code: _____. **Signature:** _____.

INSTRUCTIONS TO CANDIDATES

1. Write your full name in the space provided above.
2. Indicate your school, stream, admission number, and date clearly.
3. This paper has **TWO sections: A and B**.
4. Attempt **ALL questions** in both sections.
5. Show all working clearly where necessary.
6. Write all answers in the spaces provided.
7. Do NOT remove any page from this paper.

FOR OFFICIAL USE ONLY

SECTION	SECTION A	SECTION B	% SCORE	EE1	EE2	ME1	ME2	AE1	AE2	BE1	BE2
SCORE RANGE	30 MARKS	50 MARKS		90-100	75-89	58-74	41-57	31-40	21-30	11-20	1-10
POINTS				8 POINTS	7 POINTS	6 POINTS	5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
LEARNER'S TOTAL SCORE											

SECTION A (30 MARKS)

Answer ALL questions in this section.

1. A teacher gives learners different numbers to classify while studying number systems in a digital coding lesson.

Classify the following numbers as **rational or irrational**:

$$2,\ \sqrt{2},\ \frac{5}{8},\ 0.333\ldots,\ 2.85$$

b) A computer program requires finding reciprocals for encryption keys.
Find the reciprocal of:

$$-\frac{3}{5}$$

2. A student buys ingredients for baking:

i. $\frac{3}{4}$ kg sugar

ii. $\frac{2}{3}$ kg flour

iii. $\frac{5}{6}$ kg milk powder is used for another recipe

Evaluate:

$$\frac{3}{4}+\frac{2}{3}-\frac{5}{6}$$

3. A computer system compresses files using powers of 2.

Simplify:

$$\frac{2^5 \times 2^3}{2^4}$$

4. A floor designer models square tiles with area expression:

$$x^2 - 5x + 6$$

Factorise the expression to determine tile dimensions.

5. A carpenter designs two triangular wooden frames for roofing.

Triangle ABC has sides:

AB =3 cm, BC= 4 cm, CA=5 cm

Triangle DEF is similar and has:

DE=8 cm, EF=10 cm, and one missing side

Find:

a) Scale factor

b) Missing side

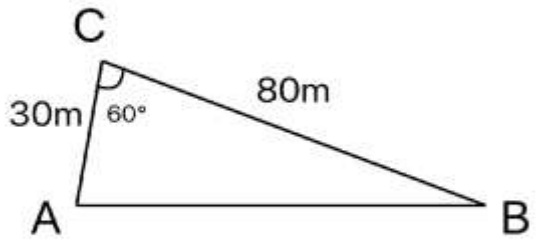
6. A drone maps a point on a straight road at A(2,3). The road is represented by the x-axis. Find the image of A after reflection.

7. A ladder leans against a wall making an angle of 30° with the ground. The ladder is 10 m long.

Find:
a) Height reached on the wall

b) Distance from wall

8. A surveyor measures a triangular piece of land:



Find the area of the triangle.

9. A pizza is cut into a sector for a customer.



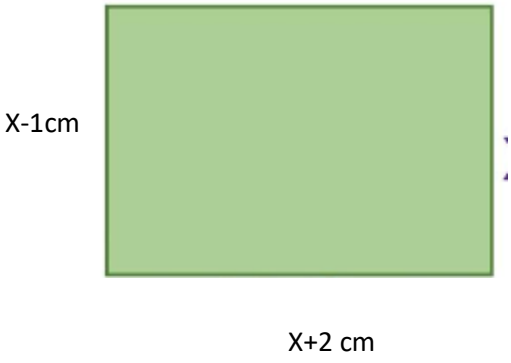
Find the area of the sector.

10. A teacher records marks of a student:

2, 4, 6, 8, 10
Find the mean score.

SECTION B (50 MARKS)

11. A builder constructs a rectangular garden:



If the Area = 12 m²
a) Form a quadratic equation

b) Solve for x

c) Find actual dimensions

12. A tech company uses powers of 3 in encryption.

Simplify:

$$(3^2 \times 3^4) \div 3^3$$

Also express 81 in base 3 index form.

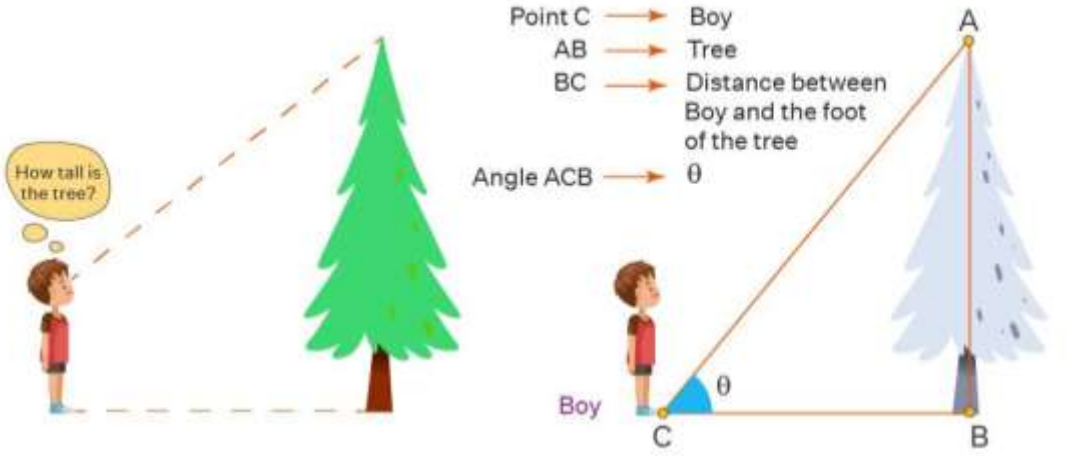
13. A logo is enlarged on a billboard.

If the Original area = 10 cm²
and the Scale factor = 2
Find:
a) New area

b) Volume scale factor

c) Two properties of similar figures

14. A surveyor measures the height of a tree:



The Angle of elevation = 45°. The Distance from tree = 10 m
Find height.

15. A factory produces cones:

The radius of a cone is 3 cm while its Height = 4 cm
Find:
a) Slant height

b) Total surface area

c) Volume

16. A trader in Nairobi sells phones:

- The cost price of the phone = 20,000
- The selling price of the phone = 25,000

Also:

- Discount = 10% on KSh 5,000 item

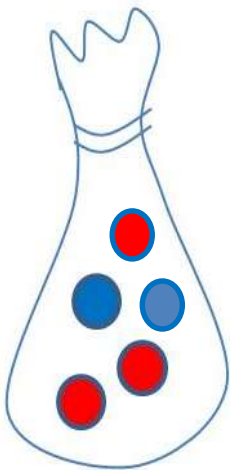
Find:
a) Profit

b) Percentage profit

c) Discount

d) Selling price after discount

17. A bag contains three red balls and two blue colored balls:



Find:
a) Probability of red

b) Probability of blue

c) Whether events are equally likely

d) Define mutually exclusive events

Alliance High School

GRADE 10 END OF YEAR EXAMS

ELIMU MSINGI INAYOENDANA NA UMAHIRI (CBE)

TATHMINI YA SHULE ZA SEKONDARI (DARAJA LA JUU)

GREDI YA 10 – FASIHI YA KISWAHILI

Muda: Saa 2

TAARIFA ZA MTAHINIWA

Jina: _____ Shule: _____
Darasa: _____ Nambari ya Mtihani: _____
Tarehe: _____ Saini: _____

MAELEKEZO KWA WATAHINIWA

1. Andika jina lako na taarifa zote muhimu katika nafasi ulizopewa.
2. Karatasi hii ina sehemu mbili: **A na B**.
3. Jibu maswali yote katika sehemu zote mbili.
4. Tumia lugha ya Kiswahili sanifu katika majibu yako.
5. Andika majibu yako katika nafasi ulizoachiwa.
6. Usiondoe ukurasa wowote wa karatasi hii.

KWA MATUMIZI RASMI PEKEE

SEHEMU	SEHEMU A	SEHEMU B	ASILIMIA (%)	KUZ 1	KUZ 2	KUF1	KUF2	KUK1	KUK2	CHI1	CHI2
WIGO LA ALAMA	ALAMA 50	ALAMA 20		90–100	75–89	58–74	41–57	31–40	21–30	11–20	1–10
POINTI				POINTI 8	POINTI 7	POINTI 6	POINTI 5	POINTI 4	POINTI 3	POINTI 2	POINTI 1
JUMLA YA ALAMA ZA MWANAFUNZI											

SEHEMU A: FASIHI SIMULIZI (ALAMA 20)

Soma hadithi ifuatayo kisha ujibu maswali.

Hapo zamani za kale, kulikuwa na kijiji kilichokumbwa na njaa kali. Watu walihangaika kupata chakula bila mafanikio. Siku moja, mzee mmoja aliwaambia vijana:
"Msikate tamaa, njaa hii ina mwisho wake."
Lakini vijana walimcheka wakisema, "Wewe ni mzee tu, hujui hali halisi!"
Baadaye mvua ilinyesha na mavuno yakawa mengi.

Maswali:

a) Bainisha aina ya hadithi hii. (2)

_____

_____

b) Taja sifa mbili za fasihi simulizi zinazojitokeza. (4)

_____

_____

c) Eleza umuhimu wa hadithi kama hii katika jamii. (4)

_____

_____

SWALI LA 2

a) Eleza maana ya fasihi simulizi. (2)

_____

_____

b) Taja sifa nne za fasihi simulizi. (4)

_____

_____

c) Eleza dhima mbili za fasihi simulizi katika jamii. (4)

_____

_____

SEHEMU B: USHAIRI (ALAMA 10)

Maisha ni safari ndefu,
Yenye milima na mabonde,
Mara furaha, mara huzuni,
Yote ni sehemu ya mwendo.

Njiani kuna vikwazo vingi,
Vya kutukatisha tamaa,
Lakini mwenye subira nyingi,
Hufika mbali na kufanikiwa.

Wengine hukata tamaa mapema,
Kwa kuona njia ni ngumu,
Husahau kuwa kila jambo,
Huanza kwa hatua za kwanza.

Mwanafunzi akijitahidi,
Katika masomo na kazi,
Atavuna mema baadaye,
Na kufurahia matunda yake.

Mkulima naye akilima,
Kwa bidii na maarifa,
Atapata mavuno mengi,
Ya kumletea maendeleo.

Maisha hayahitaji haraka,
Wala tamaa za utajiri,
Bali juhudi na nidhamu,
Pamoja na moyo wa uvumilivu.

Milima ya maisha ipo,
Na mabonde hayaepukiki,
Lakini kila anayesonga,
Hufika mwisho wa safari.

Tukumbuke daima vijana,
Elimu ni ufunguo wa maisha,
Hufungua milango mingi,
Ya mafanikio na maendeleo.

Tuwaheshimu wazazi wetu,
Na walezi wanaotulea,
Kwa kuwa hututakia mema,
Ili tuwe watu bora.

Tusikubali kushindwa kirahisi,
Kwa changamoto za duniani,
Maana kila giza lina mwisho,
Na mwangaza huja baadaye.

Urafiki mwema ni muhimu,
Kwa safari ya maisha yetu,
Hutupa ushauri na msaada,
Tunapokutana na matatizo.

Mwishowe maisha ni safari,
Yenye mafunzo mengi sana,
Tukivumilia tutafaulu,
Na kufikia ndoto zetu.

Maisha ni safari ndefu,
Yenye milima na mabonde,
Ukivumilia utafaulu,
Ukikata tamaa utaanguka.

Maswali:

a) Bainisha aina ya shairi hili (arudhi au huru). (2)

_____

_____

b) Taja bahari ya shairi (kama ipo). (2)

_____

_____

c) Tambua mbinu mbili za lugha zilizotumika. (2)

_____

_____

d) Eleza dhamira kuu ya shairi hili. (4)

_____

_____

SEHEMU C: TAMTHILIA (ALAMA 10)

SWALI LA 4 (Dondoo)

MCHONGOMA: Jamii yetu imejaa dhuluma!
BAHATI: Lakini nani atasimama kupinga?
MCHONGOMA: Ni sisi! Tusipochukua hatua, tutazama kama jahazi lililovunjika.

Maswali:

a) Tambua mandhari ya dondoo hili. (2)

_____

_____

b) Taja sifa mbili za wahusika. (2)

_____

_____

c) Eleza dhamira inayojitokeza. (3)

_____

_____

d) Eleza umuhimu wa mazungumzo katika tamthilia. (3)

_____

_____

_____

SEHEMU D: RIWAYA (ALAMA 10)

Baba alikuwa mtu wa siri nyingi. Hakuna aliyejua alikotoka wala alikokwenda kila jioni. Aliondoka nyumbani kila siku jua lilipoanza kutua na kurudi usiku wa manane. Alipoulizwa kuhusu safari zake, alitabasamu tu na kubadilisha mazungumzo. Hali hii iliwafanya wanakijiji wengi kumhofia na wengine kumtilia shaka.

Mwanawe, Baraka, alikuwa amechoshwa na hali hiyo. Alitamani kujua ukweli kuhusu maisha ya baba yake. Kwa muda mrefu alikuwa akijiuliza kwa nini baba yake alikuwa mtu wa mafumbo kiasi hicho. Siku moja, baada ya kutoka shuleni, aliamua kumfuatilia kisiri. Baba yake alipitia njia nyembamba iliyopenya msituni na kuelekea kwenye nyumba chakavu iliyokuwa imejificha katikati ya miti mikubwa.

Baraka alijificha nyuma ya kichaka na kumwona baba yake akiingia ndani ya nyumba hiyo. Dakika chache baadaye, watu kadhaa walifika na kuanza mazungumzo ya siri. Baraka hakusikia kila walichosema, lakini alisikia maneno yaliyomhangaisha sana: "Lazima fumbo hili lisijulikane kwa yeyote." Moyo wake ulianza kudunda kwa kasi. Alijaribu kusogea karibu zaidi ili asikie vizuri, lakini ghafla alikanyaga tawi kavu lililovunjika kwa kishindo.

Watu waliokuwa ndani ya nyumba waliinuka kwa mshangao. Baba alitoka nje haraka na kuangaza tochi kila upande. Baraka alitetemeka kwa hofu. Alijua kwamba kama angegunduliwa, angejikuta katika hatari kubwa. Hata hivyo, hamu ya kujua ukweli ilimfanya asiondoke. Alibaki amejificha huku akijiuliza ni siri gani kubwa ambayo baba yake alikuwa akiificha kwa miaka yote.

Maswali:

a) Bainisha aina ya mandhari katika dondoo hili. (2)

_____

_____

b) Eleza sifa mbili za mhusika Baba. (2)

_____

_____

c) Taja mbinu ya ujenzi wa ploti inayotumika. (2)

_____

_____

d) Eleza dhamira inayoweza kujitokeza. (4)

_____

_____

SEHEMU E: MAZUNGUMZO (ALAMA 10)

Alfred: Habari yako rafiki yangu?
Benta: Nzuri sana, je wewe?
Alfred: Niko salama, lakini nina tatizo.
Benta: Niambie, labda nitasaidia.

Maswali:

a) Hii ni aina gani ya mazungumzo? (2)

_____

_____

b) Taja sifa mbili za mazungumzo. (2)

_____

_____

c) Eleza dhima ya mazungumzo katika jamii. (4)

_____

_____

d) Taja miktadha miwili ambapo mazungumzo hutokea. (2)

_____

_____

SEHEMU F: HADITHI / NGANO (ALAMA 10)

Kulikuwa na kijana aliyeitwa Mlungula ambaye alionekana kichaa kwa sababu ya tabia zake za ajabu. Alizungumza peke yake na kucheka bila sababu. Lakini siku moja alitoa ushauri uliookoa kijiji kizima.

Maswali:

a) Hii ni aina gani ya hadithi? (2)

_____

_____

b) Eleza sifa mbili za hadithi za aina hii. (2)

_____

_____

c) Eleza mafunzo mawili yanayopatikana. (4)

_____

_____

d) Eleza umuhimu wa hadithi kama hizi katika jamii. (2)

_____

_____

BONASI (ALAMA ZA ZIADA 5)

(Kutoka: Mlemavu Sio Mimi – Godfrey Ipalei)

"Ulemavu si mwisho wa maisha, bali ni changamoto ya kushinda."

a) Eleza ujumbe wa kauli hii. (3)

_____

_____

_____

_____

b) Toa maoni yako kuhusu nafasi ya watu wenye ulemavu katika jamii. (2)

_____

_____