KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY

PROVINCIAL STANDARDISED ASSESSMENT

MARCH 2026

MARKS: 100

TIME: 2 hours

This question paper consists of 9 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. Start EACH question on a NEW page.
4. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
5. Show ALL the calculations clearly.
6. Round off, ALL the final answers appropriately according to the given context, unless stated otherwise.
7. Indicate units of measurement, where applicable.
8. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legibly.

QUESTION 1

1.1 300 learners from Siphumula High School plan to go on an excursion, 12% of learners will NOT participate in the planned excursion.

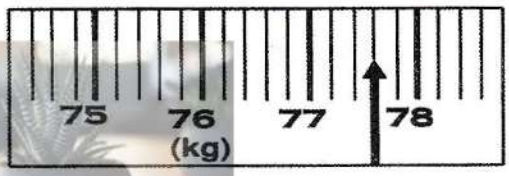
Use the information above and answer the questions that follow.

1.1.1 Determine the total number of learners who will NOT participate in the excursion. (2)

1.1.2 Determine, as a simplified common fraction, the percentage of learners that will participate in the planned excursion. (3)

1.1.3 The bus transporting learners in an excursion took 165 minutes to reach its destination. Convert the duration of the bus journey into hours and minutes. (2)

1.1.4 Noxolo's weight, a learner at Siphumula High School, is shown in the illustration alongside.



[Source: https://study.com/academy]

Write down her weight as shown in the illustration above. (2)

1.2 The learners will use the mixing ratio for Oros concentrated juice and water for preparation of diluted juice.

NOTE: The ratio of concentrated: water is 1: 9 to give the best taste results after mixing.

[Adapted from http://www.shorite.co.za]

Use the information above to answer the questions that follow.

1.2.1 Explain the meaning of the ratio 1: 9 in the given context. (2)

1.2.2 If learners have 1 000 *ml* of concentrated juice, determine the amount of water in millilitres that must be added to get a tasteful diluted juice. (2)

1.2.3 The learners decided to dilute 750 *ml* of concentrated juice to 4 500 *ml* of water. Determine the ratio in which the juice is mixed and deduce whether the taste will be good, bad or the same compared to the recommended ratio. (3)

1.3 The group of learners will visit uShaka Marine World, and each learner will pay R180 bus fare for return trip.

TABLE 1 below shows the total amount paid per learner going on a trip.

TABLE 1: TOTAL AMOUNT PAID PER NUMBER OF LEARNERS

No. of learners	**0**	**20**	**40**	**60**	**80**	**100**
Total amount (R)	0	3 600	7 200	10 800	14 400	18 000

Use TABLE 1 and the information above to answer the questions that follow.

1.3.1 Name the relationship represented in TABLE 1 above. (2)

1.3.2 State whether the number of learners will represent the independent or dependent variable. (2)

1.3.3 Write down the formula to calculate the total amount paid by each learner. (2)

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QUESTION 2

2.1 John Doe works as a sales executive in a company that makes business cards. Below is his payslip for total earnings and deductions.

PAYSLIP			
Eco Green Corp Inc.			
Date of Joining: 2025-01-15		**Employee Name**: John Doe	
Pay Period: January 2026		**Designation**: Sales Executive	
Worked Days: 25		**Department**: Sales	
Earnings	**Amount**	**Deductions**	**Amount**
Basic salary	R12 000	Provident Fund	R1 500
Incentive Pay	16,67% of basic salary	Professional Tax	R700
House Rent Allowance	R500	Loan	R600
Meal Allowance	**A**		
Total Earnings	**R14 800,40**	**Total Deductions**	**R2 800**
Net Pay	**B**		

[Adapted from https://www.cleverence.com]

Use the information above to answer the following questions.

2.1.1 Define the term *basic salary* in the given context. (2)

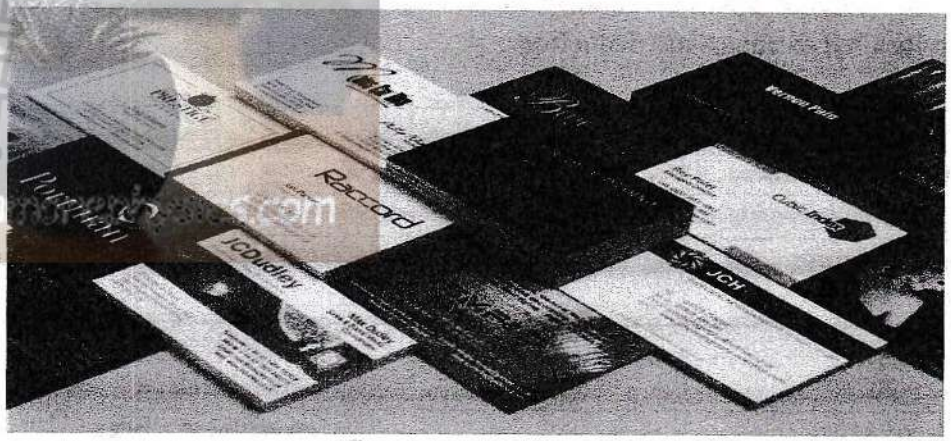
2.1.2 Calculate the value of **A**, the meal allowance. (4)

2.1.3 Show by calculations how the total deduction of R2 800 was calculated. (2)

2.1.4 Determine the value of **B**, the net salary of Mr John Doe. (2)

2.1.5 John claims that his savings are 12% of his net pay. Verify with calculations whether John's statement is correct if he saves R1 330.05 per month. (4)

2.2 Maxicard offers business cards but charges a once-off fee of R120.00 per order. 500 cards ordered are charged a total of R320.00.



[Source: https://flmedia.group/shop/x-banner-2]

Use the information above to answer the questions that follow.

2.2.1 Determine how much is the fixed expense charged by Maxicard per order. (2)

2.2.2 Show by calculations that the variable expense for producing ONE business card is R0.40 using the order above. (3)

2.2.3 Mr Sahota a customer of Maxicard, claims that with a budget of R1 200, including the once-off fee, he can order 2 700 business cards.

Verify whether his claim is valid by showing all calculations. (4)

2.2.4 Name TWO material that Maxicard can use to produce the business cards. (4)

2.2.5 Maxicard also offers 50% discount on the once-off fee if a customer orders 2 000 or more cards in a single order.

Mr Dlamini another customer ordered 2 100 cards. Calculate the total amount he will pay. (5)

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QUESTION 3

3.1 Below is a recipe that Femi will use to make round cookies for her birthday tea party.

Ingredients: serves 48: **yields:** four dozen.
Preparation time: 20 minutes, **Cook time**:10 minutes, **Total time**: A, **Bake at 180°C**

300g of all-purpose flour
1 teaspoon baking soda
$\frac{1}{2}$ teaspoon baking powder
1 cup butter, softened
$1\frac{1}{2}$ cups white sugar
1 large egg
1 teaspoon vanilla extract
1 teaspoon = 5*ml* and 1 cup = 250 *ml*

[Source:https://www.allrecipes.com/recipe/9870/easy-sugar-cookies/]

Study the information above and answer the questions that follow.

3.1.1 Convert the mass of all-purpose flour to pounds, if **1 pound = 454 grams.** (2)

3.1.2 Calculate the amount of baking powder in millilitres required to serve 120 people. (3)

3.1.3 If Femi doubles the recipe to make 96 cookies, calculate the amount of sugar needed in cups and millilitres. (3)

3.1.4 The oven is preheated to 180 °C. Convert this temperature to degrees Fahrenheit. You may use the formula: **°F = °C × 1.8 + 32°** (2)

3.1.5 Femi intends to bake 10 dozen of round cookies to serve 150 guests, each guest will get three cookies.

a) The clock alongside displays the time at which Femi started preparing the first batch of cookies in the afternoon.

Write down the time shown on the clock in words. (2)

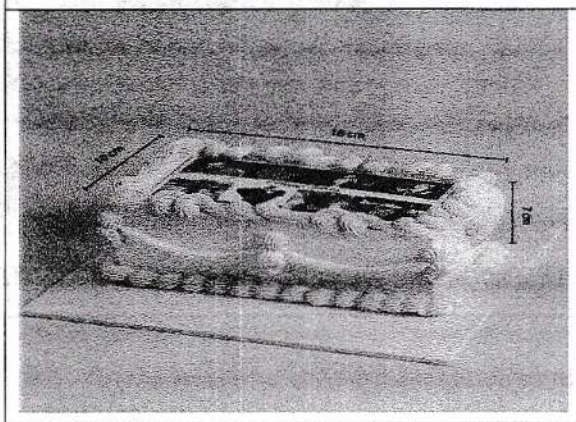
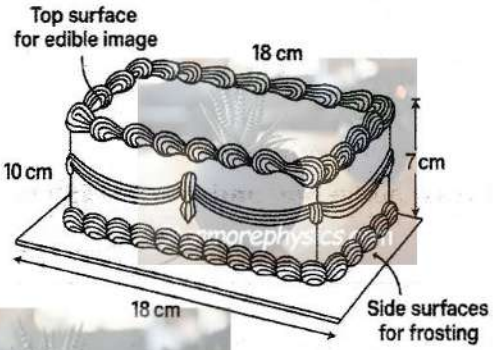
[Source: https://stock.adobe.com.za]

b) The birthday tea party will start at 17:30. Suggest ONE realistic adjustment she could make if time is not sufficient to finish baking. (2)

c) Name ONE kitchen utensil or equipment Femi will need to prepare and bake the round cookies. (2)

3.2 The diagram below represents a rectangular one tier cake that Femi baked for her birthday party. The cake has the following dimensions:

- Length (l) = 18 cm
- Width (w) = 10 cm
- Height (h) = 7 cm

PICTURE OF THE CAKE	DIAGRAM OF THE RECTANGULAR CAKE
	

- **NOTE** – Frosting is a sweet, spreadable, and often fluffy topping or filling for cakes.
- The cake frosting length is three time perimeter of the cake.

[Adapted from https://basketeer.com/charlotte-bakery]

Use the information above and the diagrams to answer the questions that follow.

3.2.1 Calculate the volume of the cake in cm^3.
You may use the formula. **Volume of rectangular prism = $l \times w \times h$** (3)

3.2.2 Determine the surface area of the cake, excluding the bottom part of the cake.
You may use the formula:
Total surface area = $l \times w + 2 \times (w \times h) + 2 \times (l \times h)$ (3)

3.2.3 The frosting of the cake costs R0.25 per cm. Determine to the nearest rand, the total cost of frosting, if 5 cakes were baked.

You may use the formula:
Perimeter = $2 \times (l + w)$ (5)

3.2.4 The length of the tray that holds the cake is 25% more than the length of the cake. Calculate in mm the length of the tray. (3)

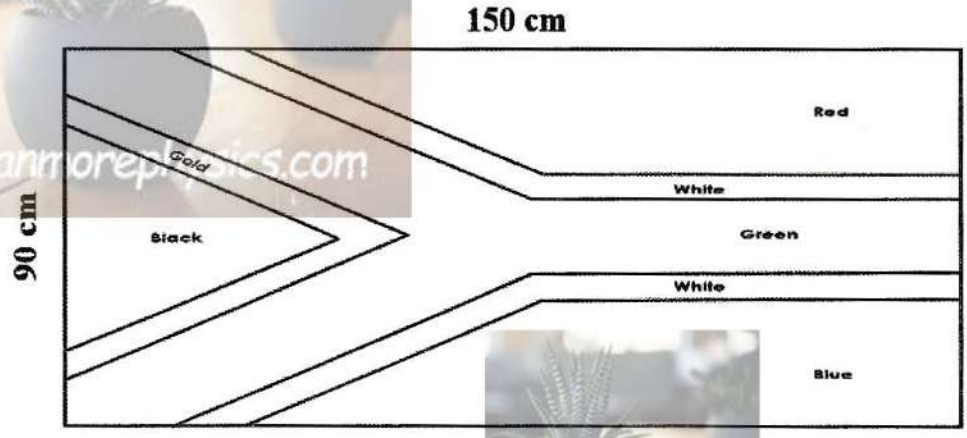
[30]

QUESTION 4

4. The diagram below represents the South African national flag. The flag is made up of six colours: green, black, white, gold, red, and blue. For a national holiday event, the flag is produced with the following dimensions:

- Width (w) = 90 cm
- Length (l) = 150 cm

SOUTH AFRICAN NATIONAL FLAG



- **NOTE** -The ratio of width to length of the flag is 2: 3

[Source: https://www.twinkl.co.za/resource/heritage-day]

Use the information and the diagram above to answer the questions that follow.

4.1 Identify the geometric shape formed by the black colour of the flag. (2)

4.2 Calculate the area of the entire flag in cm^2.
You may use the formula: **Area of rectangle = $l \times w$** (2)

4.3 The flag is enlarged so that the length becomes 300 cm. Determine the new width of the flag if the ratio of 2: 3 is maintained. (2)

4.4 The Y-green shape makes up approximately 20% of the total area of the flag.
Calculate the area of the 150 cm by 90 cm flag that is NOT green. (3)

4.5 For the national holiday, organisers plan to display 12 flags of size 90 cm × 150 cm and 8 flags of 300cm × 200cm.
Verify whether the organisers' budget of R30 000 is enough if the cost is R0.05 per cm^2. (7)

[16]

TOTAL MARKS:100

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MARKING GUIDELINE

MARKS: 100

Symbol	Explanation
MA	Method with accuracy
MCA	Method with Consistent accuracy
CA	Consistent accuracy
A	Accuracy (Answer)
C	Conversion
RT	Reading from a table/ graph/ diagram/ document
SF	Correct substitution in a formula
O	Opinion/ explanation/ reason/deduction/example
P	Penalty e.g. for no units, incorrect rounding off
S	Simplification
R	Rounding off
NPR	No penalty for correct rounding
NPU	No penalty for omitting units, but wrong unit is penalised
AO	Answer only full marks

This marking guideline consists of 7 pages.

QUESTION 1 [22] ANSWERS ONLY FULL MARKS			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
1.1.1	No of learners Not going =12% of 300 learners =0,12 ×300 learners ✓MA =36 ✓A	1MA multiply 300 by 12% 1A answer (2)	B L1 E
1.1.2	Simplified Common fraction =100% -12% ✓MA $=\frac{88}{100}$ ✓MA $=\frac{22}{25}$ ✓S	1MA subtracting 12% 1MA correct fraction 1S simplification (3)	B L1 M
1.1.3	✓A Duration = 2hrs and 45minutes ✓A	1A 2 hours 1A 45 minutes 2)	M L1 E
1.1.4	77,6 kg ✓✓RT	2RT correct weight (2)	M L1 E
1.2.1	One part of the concentrated juice will dilute/mix with nine parts of water. ✓✓O	2O correct explanation (2)	M L1 E
1.2.2	Amount of water in ml = 9× 1 000 ml ✓MA = 9 000 ml ✓A	1MA using the ratio 1A answer (2)	M L1 M
1.2.3	750 ml: 4 500 ml ✓MA 1 : 6 ✓A It will taste bad ✓O	1MA ratio order 1A simplification 1O opinion (3)	M L1 E
1.3.1	Direct proportion ✓✓A	2A correct answer (2)	F L1 E
1.3.2	Independent variable ✓✓A	2A correct answer (2)	F L1 E
1.3.3	R180 × number of learners ✓✓A	2A correct answer **Accept total amount paid / number of learners** (2)	F L1 E
			[22]

QUESTION 2[32]			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
2.1.1	Basic salary Is the regular fixed salary earned by John Doe before any other additional earnings. ✓✓O	2O correct explanation (2)	F L1 E
2.1.2	Incentive Pay = 16,67% × R12 000 ✓MA = R2 000.40 ✓A **A** = R14 800.40 – R12 000 – R2 000.40 – R500 ✓MA = R300 ✓CA	1MA multiplying correct values 1A correct incentive pay 1MA subtracting correct values 1CA simplification (4)	F L3 M
2.1.3	Total deductions = R1 500 + R700 + R600 ✓✓RT = R2 800.00	2RT adding all correct values (2)	F L1 E
2.1.4	Net salary = R14 800.40 – R2 800 ✓MA =R12 000.40 ✓A	1MA subtracting correct values 1A answer (2)	F L2 E
2.1.5	Savings% = $\frac{\text{R1 330.05}}{\text{R12 000.40}}$ × 100% ✓MA ✓MA =11,0833 ✓CA =11,1% John statement is incorrect ✓O	**CA from 2.1.4** 1MA percentage concept 1MA dividing correct values 1CA simplification 1O conclusion (4)	F L4 M
2.2.1	R120 ✓✓A	2A correct fixed charge (2)	F L1 E
2.2.2	Variable expense = $\frac{\text{R320 – R120}}{\text{500 cards}}$ ✓ MA ✓MA = $\frac{\text{R200}}{\text{500}}$ ✓S =R0,40	1MA subtracting once off fee 1MA dividing by 500 1S total variable expense of R200 (3)	F L3 D
2.2.3	Total amount = R120 + R0,40 ×2 700 ✓MA = R120 +R1 080 ✓MA = R1 200 ✓CA Mr Sahota claim is VALID. ✓O **OR** Cost exlcuding once-off fee = R1 200 – R120 ✓MA No of cards = $\frac{\text{R1 080}}{\text{R0.40}}$ ✓CA ✓MA =2 700 Mr Sahota claim is VALID. ✓O	**CA from 2.2.2** 1MA multiplying 2 700 by R0,40 1MA adding once off fee 1CA simplification 1O conclusion **OR** 1MA subtracting once-off fee 1CA R1080 1MA dividing by R0,40 1O conclusion (4)	F L4 M

QUE	SOLUTION	EXPLANATION	T&L
2.2.4	• Plastic PVC covers ✓✓O • Hard paper/ thick paper ✓✓O • Cardstock ✓✓O • Laminated paper ✓✓O • Ink ✓✓O	2O opinion 2O opinion **Choose any two materials** (4)	F L4 D
2.2.5	Total amount of orders more than 2 000 cards = R120 + R0.40 ×2 100 ✓MA =R120 +R840 =R960 ✓A Discount = 50% × R120 ✓MA =R60 ✓S Discount total amount = R960 – R60 =R900 ✓CA **OR** Discount once-off fee = 50% × R120 ✓MA =R60 ✓S Total amount = R60 + R0.40 ×2 100 ✓MA = R60 +R840 ✓MA =R900 ✓CA	 1MA multiplying R0,40 by 2 100 1A simplification 1MA percentage concept 1S simplification 1CA simplification **OR** 1MA percentage concept 1S simplification 1MA multiplying R0,40 by 2 100 1MA adding R60 1CA simplification (5)	F L3 D
			[32]

QUESTION 3 [30]			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
3.1.1	Mass in pounds = $\frac{300 \text{ grams}}{454 \text{ grams}}$ ✓C = 0, 6607929... = 0,66 pounds ✓CA	1C dividing by conversion factor 1CA simplification **NPR** (2)	M L2 E
3.1.2	Baking powder for 120 people = $\frac{120 \text{ people}}{48 \text{ people}}$ ✓MA =2,5 × 2,5ml ✓MA =6,25ml ✓CA	1MA dividing correct values 1MA multiplying by 2,5 ml 1CA simplification (3)	M L3 M
3.1.3	Amount of sugar = 2 × 1,5 cups ✓MA ✓A = 3 cups × 250 ml = 750 ml ✓C	1MA multiplying correct values 1A number of cups 1C conversion to ml (3)	M L2 M
3.1.4	°F = °C × **1,8 + 32**° =180 ×1,8 +32 ✓SF =356 ✓A	1SF correct substitution 1A correct temperature (2)	M L2 E
3.1.5 (a)	Half past three in the afternoon ✓✓A **OR** Thirty minutes after three in the afternoon ✓✓A **OR** Thirty minutes to four in the afternoon ✓✓A	2A correct time (2)	M L1 E
3.1.5 (b)	• She must start baking earlier ✓✓O **OR** • Use a bigger oven to accommodate bigger trays ✓✓O **OR** • She can reduce batch size ✓✓O	2O opinion (2)	M L4 E
3.1.5 (c)	• Mixing bowl ✓✓O **OR** • Baking trays ✓✓O **OR** • Measuring cups/spoons ✓✓O	2O opinion (2)	M L4 M
3.2.1	Volume = 18cm × 10cm × 7cm ✓SF =1 260 cm^3 ✓S ✓P	1SF substitution 1S simplification 1P units (3)	M L2 E
3.2.2	Surface area = (18cm × 10cm) +2 × (10cm × 7cm) + 2 × (18cm × 7cm) ✓SF =180cm^2 + 140 cm^{2+} 252 cm^2 ✓S =572 cm^2 ✓CA	1SF substitution 1S simplification 1CA answer (3)	M L2 E

QUE	SOLUTION	EXPLANATION	T&L
3.2.3	Frosting cost = 2 × (18cm +10cm) ✓SF = 56cm ✓A = 56cm × 3 × 5 cakes ✓MA = 840 cm = 840 cm × R0,25 ✓MA = R210 ✓CA	1SF substitution 1A simplification 1MA multiplying by 5 and 3 1MA multiplying by R0,25 1CA simplification (5)	F L3 M
3.2.4	Length of the tray in mm = 125% × 18 cm ✓MA = 22,5 cm = 22,5 cm × 10 ✓C = 225 mm ✓CA **OR** ✓MA Length of the tray in mm = 125% × 180 mm ✓C = 225 mm ✓CA **OR** Length of the tray in mm = 18 cm x 25% ✓C = 4,5 cm = 18 cm + 4,5 cm = 22,5 cm = 22,5 cm x 10 ✓C = 225 mm ✓CA **OR** Length of the tray in mm = 180 mm x 25% ✓C = 45 mm = 180 mm + 45 mm = 225 mm = 22.5 x 10 ✓C = 225mm ✓CA	1MA calculating new length 1C converting cm to mm 1CA correct length **OR** 1MA percentage concept 1C converting cm to mm 1CA correct length **OR** 1MA percentage concept 1C converting cm to mm 1CA correct length **OR** 1MA percentage concept 1C converting cm to mm 1CA correct length (3)	M L3 M
			[30]

QUESTION 4 [16]			
QUE	**SOLUTION**	**EXPLANATION**	**T&L**
4.1	Triangle ✓✓A	2A correct shape (2)	M L1 E
4.2	Area of the flag = 150 cm × 90 cm ✓SF =13 500 cm^2 ✓A	1SF substitution 1A answer (2)	M L2 E
4.3	New width = $\frac{300cm}{3}$ × 2 ✓MA = 200 cm ✓A **OR** New width = $\frac{2}{5}$ × 500 ✓MA = 200 cm ✓A	1MA using ratio correctly 1A answer **OR** 1MA using ratio correctly 1A answer (2)	M L2 E
4.4	Area that is NOT green = 20% × 13 500 cm^2 ✓MCA = 2 700 cm^2 =13 500 cm^2 - 2 700cm^2✓MCA =10 800cm^2 ✓CA **OR** Area that is NOT green = 100% - 20% ✓MA = 80% = 80%× 13 500 cm^2 ✓MA =10 800cm^2 ✓CA	**CA from 4.2** 1MCA calculating 20% 1MCA subtraction 1CA simplification **OR** 1MA subtracting % 1MA multiplying by 80% 1CA simplification (3)	M L2 E
4.5	Small flags (90cm x 150cm) Area = 12 × 13 500cm^2 ✓MA = 162 000 cm^2 ✓CA Large flags Area = 300 cm × 200 cm = 60 000 cm^2✓CA = 8 × 60 000 cm^2 = 480 000 cm^2 ✓CA Total area = 162000 + 480000 = 642 000 cm^2 ✓MCA Cost = 642000cm^2 × R0,05 = R32 100 ✓CA Budget is NOT sufficient ✓O	**CA from 4.2 & 4.3** 1MA multiplying by 12 1CA simplification 1CA simplification 1CA simplification 1MCA total area 1CA answer 1O opinion (7)	F L4 D
			[16]
		TOTAL MARKS:	**100**