Province of the
EASTERN CAPE
EDUCATION

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TO: **DISTRICTS HEADS OF EXAMINATIONS**
PRINCIPALS OF SCHOOLS IN THE FET BAND

FROM: **MS N. MBELEKI**
CES: INSTRUMENT DEVELOPMENT AND MODERATION SECTION

SUBJECT: **ERRATA – TECHNICAL MATHEMATICS P1 GRADE 12 SEPTEMBER 2019**

DATE: **09 SEPTEMBER 2019**

The Technical Mathematics P1 Grade 12 September was written on Friday, 23 August 2019. We were made aware of certain amendments and omissions that were discovered during the marking process.

In order to address this and to ensure that learners are not disadvantaged, the following standardised approach to marking must be adopted across the Province. The following guidelines with regard to marking was prepared in conjunction with the examiner and moderator.

ERRATA

QUESTION 9

The driver of a motor car fills the petrol tank of his car to full capacity in a petrol station, to undertake a journey that requires a minimum of 25 ℓ of fuel to drive.

Unfortunately, he knocks his car on the corner of the road pavement as he leaves the petrol station resulting into a leakage from an opening in his petrol tank.

The picture below shows the damaged petrol tank of the car.

The equation, $V(t) = t^2 - 9t + 35$ represents the amount of petrol lost over time (t) in minutes.

Determine:

9.1	The amount of petrol in the tank before the leakage	(2)
9.2	The amount of petrol that leaked out after 1 minute	(2)
9.3	The time it took for maximum petrol to leak out of the tank	(3)
9.4	The maximum amount of petrol that leaked	(2)
		[9]

VRAAG 9

'n Motoris maak sy petroltenk vol tot kapasiteit by 'n vulstasie, om 'n rit te onderneem wat 'n minimum van 25 ℓ brandstof benodig.

Toe hy die vulstasie verlaat, stamp hy ongelukkig die hoeksteen van die sypaadjie wat 'n lek in die petroltenk veroorsaak.

Die prent hieronder toon die beskadigde petroltenk van die motor.

Die vergelyking, $V(t) = t^2 - 9t + 35$ verteenwoordig die hoeveelheid petrol verloor oor tyd (t) in minute.

Bepaal:

9.1 Die hoeveelheid petrol in die tenk voor die lekkasie (2)

9.2 Die hoeveelheid petrol wat na 1 minuut uitgelek het (2)

9.3 Die tyd wat dit geneem het vir die maksimum petrol om uit die tenk te lek (3)

9.4 Die maksimum hoeveelheid petrol wat uitgelek het (2)
[9]

The original marking guideline/Die oorspronklike nasienriglyn:

QUESTION/*VRAAG* 9			
9.1	$V(t) = t^2 - 9t + 35$ $V(0) = (0)^2 - 9(0) + 35 = 35l$	✓ Substitution / *vervanging* **SF** ✓ $V(0) = 35l$ **A** **NPU**	(2)
9.2	$V(t) = t^2 - 9t + 35$ $V(1) = (1)^2 - 9(1) + 35 = 27l$	✓ Substitution/ *Vervanging* **SF** ✓ $V(1) = 27l$ **A** **NPU**	(2)
9.3	$V(t) = t^2 - 9t + 35$ $V'(t) = 2t - 9$ $V'(t) = 2t - 9 = 0$ $t = \frac{9}{2}$	✓ $V'(t)$ **A** ✓ $V'(t) = 0$ **A** ✓ $t = \frac{9}{2}$ **CA**	(3)
9.4	Maximum amount of fuel leaked / *Maksimum brandstof wat uitgelek het*: $V\left(\frac{9}{2}\right) = \left(\frac{9}{2}\right)^2 - 9\left(\frac{9}{2}\right) + 35 \approx 14,75l$	✓Substitution/ *vervanging* **CA** ✓ V $\approx 14,75l$ **CA**	(2)
			[9]

The statement is ambiguous; there are different interpretations of the statement given. The equation given has a minimum value, therefore to ask for the maximum petrol lost is not a possible option which makes **Q.9.3** and **Q.9.4** not valid. The recommendation is that QUESTION 9 should not be marked; thus the question paper total will be 141 marks when marking.

We request that this must be brought to the attention of all educators marking these papers and sincerely apologise for the inconvenience.

Yours in education.

09 September 2019

MS N. MBELEKI **DATE**