



NASIONALE SENIOR SERTIFIKAAT-EKSAMEN
NOVEMBER 2019

WISKUNDIGE GELETTERDHEID: VRAESTEL II
NASIENRIGLYNE

Tyd: 3 uur

150 punte

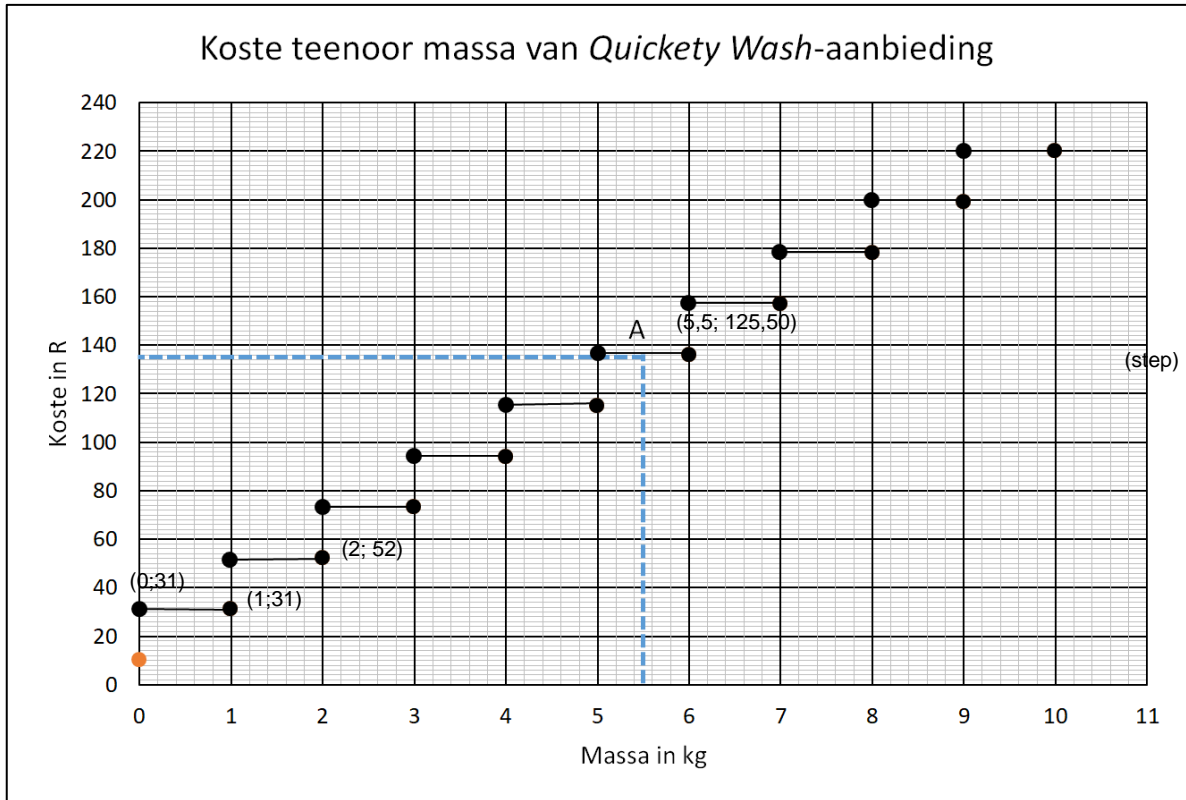
Hierdie nasienriglyne word voorberei vir gebruik deur eksaminatore en sub-eksaminatore, almal van wie vereis word om 'n standardiseringsvergadering by te woon om te verseker dat die riglyne konsekwent geïnterpreteer en toegepas word in die nasien van kandidate se skrifte.

Die IEB sal nie enige besprekings of korrespondensie rakende die nasienriglyne aangaan nie. Dit word erken dat daar verskillende sienings oor sekere sake van belang of detail in die nasienriglyne mag wees. Dit word ook erken dat, sonder die voordeel van die bywoning van 'n standardiseringsvergadering, daar verskillende interpretasies van die toepassing van die nasienriglyne mag wees.

VRAAG 1

1.1 $C = 21k + 10$

1.2



1.3 R136 (tweede punt: A op die grafiek) OF R125,50 (indien reguit lyn)

1.4 1.4.1 $45 \div 0,000264172$
 $= 170\,343,564 \text{ ml} \div 1\,000$
 $= 170,343 \text{ l}$
 $\approx 170 \text{ l}$

OF

15 gallon = 56,8 l
 $45 \div 15 = 3$
 $56,8 \times 3 = 170,4 \text{ l}$

1.4.2 $\frac{8,28 - 7,14}{7,14} \times 100\% = 15,97\% \approx 16\% \therefore$ verkeerd

OF

$7,14 \times 115,97\% = 8,275 \approx 8,28 \therefore$ korrek

1.4.3 $170 \div 1\,000 = 0,17\text{ k}\ell$
 $0,17 \times 3 = 0,51$
 $0,51 \times 8,28 = \text{R } 4,22$ (indien nie afgerond nie, kry hulle 4,23)
OF
 $6\text{ kg per week} \div 2\text{ kg} = 3\text{ bondels}$
 $3\text{ bondels} \times 170\text{ }\ell = 510\text{ }\ell\text{ per week} = 0,51\text{ k}\ell$
 $0,51\text{ k}\ell \times \text{R}8,28 = \text{R}4,22$
OF
 $8,28 \div 1\,000 = 0,00828$
 $0,00828 \times (3 \times 170) = \text{R}4,22$

1.4.4 $\text{R}129 + \text{R}4,22$ (uit Vraag 1.4.3) = $\text{R}133,22$

1.4.5 Sy moet dit self doen dit is $\text{R}2,78$ goedkoper.

1.5 1.5.1 $1,8 + 0,3 = 2,1 \times 2 = 4,2$
 $1,2 \times 2 = 2,4$
 $4,2 + 2,4 = 6,6\text{ m}$
OF
 $2 \left[1,2 + 1,8 + \frac{30}{100} \right]$
 $= 2(3,3)$
 $= 6,6\text{ m}$

1.5.2 $2,1 + 1,2 = 3,3$
 $4 - 3,3 = 0,7 \times 2 = 1,4\text{ m}$
OF
 $8\text{ m} - 6,6\text{ m} = 1,4\text{ m}$
OF
 $6,6 \div 4 = 1,65 \approx 2\text{ pale}$
 $8\text{ m} - 6,6\text{ m} = 1,4\text{ m}$

1.6 1.6.1 $1,2 - 0,05 = 1,15\text{ m}$
 $1,15 \div 7 = 0,164\text{ m} = 16,4\text{ cm}$
OF
 $1,2\text{ m} = 120\text{ cm}$
 $120\text{ cm} - (2 \times 2,5\text{ cm}) = 115\text{ cm}$
 $115\text{ cm} \div 7 = 16,428 \dots = 16,4\text{ cm}$

1.6.2 $(4 + 3) \times 16,4 = 114,8\text{ cm}$
 $350\text{ cm} \times 8 = 2\,800\text{ cm}$
 $2\,800 + 114,8 = 2\,914,8\text{ cm} = 29,148\text{ m} \approx 30\text{ m}$
OF
 $7 \times 0,164 = 1,148$
 $3,5 \times 8 = 28$
 $1,148 + 28 = 29,148 \approx 30\text{ m}$
OF
 $350 \times 8 = 2\,800$
 $2\,800 + 115 = 2\,915 = 29,15 \approx 30$

VRAAG 2

2.1 2.1.1 $26 - 20 = 6$

2.1.2 $\frac{281}{12} = 23,41 \approx 23$ (Indien slegs 7 Top12's gebruik is, net 1 punt)

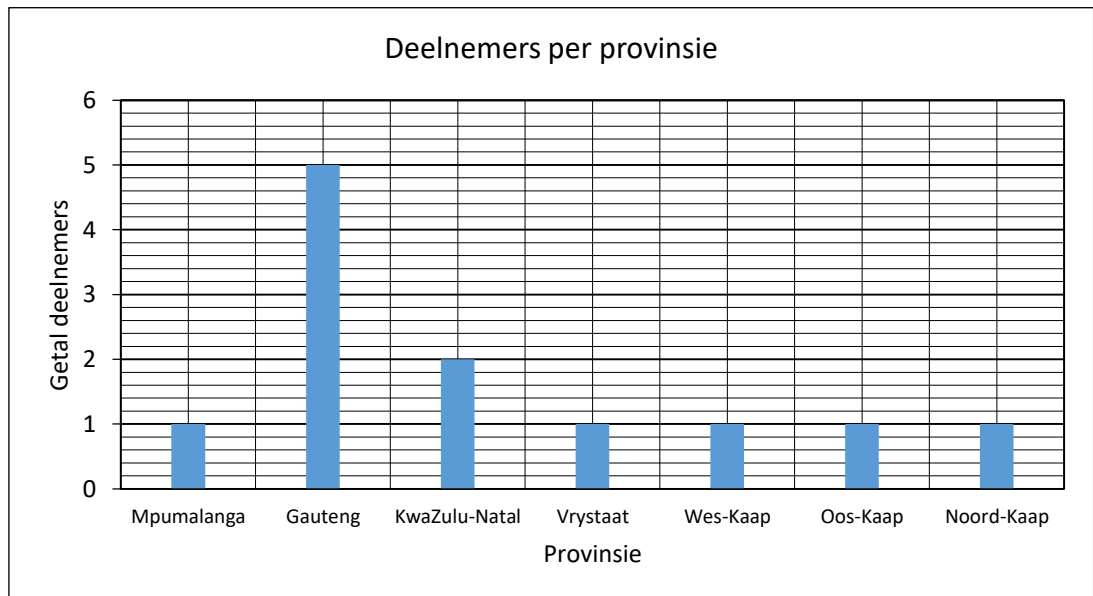
2.1.3 23

2.1.4 $\frac{23 + 24}{2} = 23,5$

2.1.5 Daar is geen 3^{de} posisie nie, want 3^{de}, 4^{de} en 5^{de} word almal as top 5 geplaas.

OF Dit word nie in die tabel gesê nie (slegs 1 punt)

2.1.6



2.2 2.2.1 R25 000: R250 000: R1 000 000
1 : 10 : 40

OF

R25 000: R275 000: R1 000 000
1 : 11 : 40 (slegs 2 punte)

2.2.2 $3\,000\,000 - 1\,000\,000 - 445\,500 = R1\,554\,500$

2.2.3 $\frac{1\,000\,000 - 25\,000}{25\,000} \times 100\% = 3\,900\%$

$$\begin{aligned}
 2.3 \quad 2.3.1 \quad & 5:15 + 9\frac{1}{3} \\
 & = 5:15 + 9:20 \\
 & = 14:35 \\
 & 14:35 + 3:30 \\
 & = 18:05
 \end{aligned}$$

OF

$$\begin{aligned}
 & 5\frac{1}{4} + 9\frac{1}{3} + 3\frac{1}{2} \\
 & = 17\frac{13}{12} \\
 & = 18\frac{1}{12} \\
 & = 18:05
 \end{aligned}$$

$$\begin{aligned}
 2.3.2 \quad & 14:10 + 18:05 \\
 & = 8:15 \text{ am} \\
 & 13:15 - 8:15 = 5 \text{ ure voor} \\
 & \therefore \text{GT} +7 \text{ tydsone}
 \end{aligned}$$

OF

$$\begin{aligned}
 & 24:00 - 14:10 = 9:50 + 13:15 = 23:05 - 18:05 = 5 \text{ ure} \\
 & \text{GT}2 + 5 = 7
 \end{aligned}$$

$$\begin{aligned}
 2.3.3 \quad & t = \frac{d}{s} = \frac{27,9}{50} = 0,558 \text{ uur} \\
 & 0,558 \text{ uur} = 34 \text{ minute} \\
 & 13:15 + 0:34 + 0:30 = 14:19 \\
 & \therefore \text{Sy sal nie betyds daar wees nie.}
 \end{aligned}$$

VRAAG 3

$$\begin{aligned}
 3.1 \quad 3.1.1 \quad & \frac{140\,000\,000}{117\,580\,000} = 1,1906 \\
 & = 1 : 11 : 30
 \end{aligned}$$

$$\begin{aligned}
 3.1.2 \quad & 140 \text{ miljoen} \times 7 = 980 \text{ miljoen} \\
 & \therefore \text{Nie presies 1 biljoen nie/Onwaar}
 \end{aligned}$$

OF

$$\begin{aligned}
 & \frac{1\,000\,000\,000}{140\,000\,000} = 7,14 \text{ dae} \\
 & = 1 \text{ week en 1 dag} \\
 & \therefore \text{Onwaar}
 \end{aligned}$$

$$\begin{aligned}
 3.2 \quad 3.2.1 \quad & \text{Opskrif en astitels } \mathbf{OF} \text{ y-as op Grafiek B begin nie by nul nie } \mathbf{OF} \text{ daar} \\
 & \text{word slegs 2 kwartale vir 2016 getoon } \mathbf{OF} \text{ geen byskrifte op X- of Y-} \\
 & \text{as nie.}
 \end{aligned}$$

3.2.2 Die inkremente op y-as

3.2.3 Werknemer – Grafiek B want groot verandering
Baas – Grafiek A want daar is nie veel verandering in die stawe nie

3.2.4 $1,481 \times 142,47\% = \$2,11$ biljoen

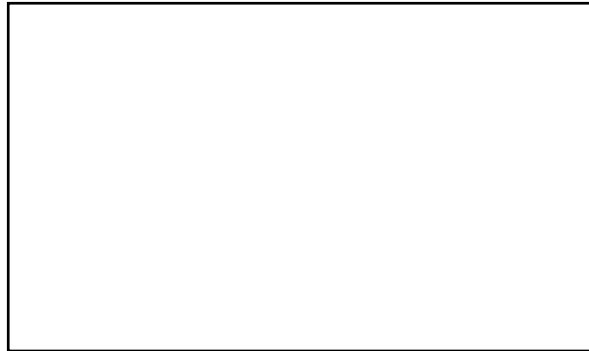
OF

$$\frac{x - 1,481}{1,481} \times 100\% = 42,47\%$$

$$x = \$2,11 \text{ biljoen}$$

VRAAG 4

4.1 Lengte = 7,8 cm
Breedte = 4,6 cm
(2 mm speling in
die reghoektekening)



4.2 4.2.1 Die fout is dat hulle volume deur volume deel.

4.2.2 Korrekte antwoord:

$$\text{Lengte: } \frac{6}{0,97} = 6,1 \approx 6$$

$$\text{Breedte: } \frac{2,4}{0,1} = 24$$

$$\text{Hoogte: } \frac{2,6}{0,59} = 4,4 \approx 4$$

$$6 \times 24 \times 4 = 576 \text{ TV's Hy is reg.}$$

4.3 4.3.1 $\frac{1}{3} \times \frac{1}{60} = \frac{1}{180}$

4.3.2 Waarskynlikheid neem toe want jy het 'n houer uitgesluit.

$$\frac{1}{2} \times \frac{1}{60} = \frac{1}{120}$$

4.4 4.4.1 $28\,930 \times 18,74\% = \text{¥}5\,421,482$
 $5\,421,482 \times 576 = \text{¥}3\,122\,773,632$
 $3\,122\,773,632 \div 7,82 = \text{R}399\,331,67$
OF
 $28\,930 \div 7,82 = \text{R}3\,699,4885$
 $3\,699,4885 \times 18,74\% = 693,2841$
 $693,2841 \times 576 = \text{R}399\,331,67$

4.4.2 $28\,930 \times 118,74\% = \text{¥}34\,351,482$
 $34\,351,482 \div 7,82 = \text{R}4\,392,77$
OF
 $\text{R}399\,331 \div 576 = \text{R}693,28$
 $\text{R}693,28 + \text{R}3\,699,49 = \text{R}4\,392,77$

4.4.3 $\text{R}4\,392,77 \times 115\% = \text{R}5\,051,6855 \approx \text{R}5\,051,69$

Totaal: 150 punte