

WISKUNDE TOETS

GRAAD 8
EKSAMINATOR:
MODERATOR:

Maart 2016
TYD: 60 min
PUNTE: 50

INSTRUKSIES / INSTRUCTIONS:

1. Beantwoord alle vrae onder mekaar. / *Answer all the questions underneath each other.*
2. Los 'n lyn oop tussen elke som. / *Leave a line open between every sum.*
3. Wys al jou bewerkings. / *Show all your calculations.*
4. Werk netjies en leesbaar. / *Write legibly.*
5. Trek 'n lyn na elke vraag. / *Rule off each question.*
6. GEEN SAKREKENAAR / *NO CALCULATOR*

VRAAG 1/QUESTION 1

Bereken: *Calculate:*

- 1.1 $-10 - (-8)$ (1)
 - 1.2 $(-2)^2 + (-3)^3$ (3)
 - 1.3 $-4 \times 5 + (-5)^2$ (3)
 - 1.4 $\sqrt[3]{-64} + (-2)^0$ (3)
 - 1.5 $\sqrt{81} - \sqrt[3]{-27}$ (3)
 - 1.6 $\sqrt{16+9} - 1^3$ (3)
 - 1.7 $(8-2)^2 \div 3^2 \times \sqrt{25}$ (5)
 - 1.8 $\left(\frac{5}{7}\right)^2$ (1)
 - 1.9 $\sqrt{2\frac{1}{4}}$ (2)
 - 1.10 $9(-9)^0$ (2)
- [26]

VRAAG 2/QUESTION 2

- 2.1 Bepaal die KGV en GGD van 18 en 20 deur die getalle in priemfaktore te ontbind
Determine the LCM and HFC of 18 and 20 by means of primefactors. (4)
 - 2.2.1 Skryf 7056 as 'n produk van sy priemfaktore in eksponensiële vorm
Write 7056 as the product of its prime factors in exponential form. (3)
 - 2.2.2 Gebruik die priemfaktore en bereken $\sqrt{7056}$
Use its prime factors and calculate $\sqrt{7056}$ (2)
- [9]

VRAAG 3/QUESTION 3

- 3.1 Skryf die volgende verhoudings in die eenvoudigste vorm neer.
Write the following ratios in their simplest form
32 : 24 : 40 (1)
- 3.2 Verdeel R1500 in die verhouding van 2 : 3
Divide R1500 in the ratio of 2 : 3 (2)
- 3.3 In 'n jaar neem Willem se massa in die verhouding 5 : 7 toe.
Sy massa is nou 35 kg. Wat sal sy massa oor 'n jaar wees?
*In a year's time Willem's mass increases in the ratio 5 : 7.
His current mass is 35 kg. What will his mass be in a year's time?* (3)
- 3.4 Skryf in wetenskaplike notasie:
Write in scientific notation: (1)
- 3.4.1 1 256 000 000 (1)
- 3.4.2 80 biljoen / billion [8]

VRAAG 4/QUESTION 4

- 4.1 Vereenvoudig die volgende deur eksponente wette te gebruik.
Los jou antwoord in eksponensiële vorm
Simplify the following by using the exponential rules. Leave the answers in exponential form
 - 4.1.1 $7^5 \div 7$
 - 4.1.2 $2^7 \times 2^6$
 - 4.1.3 $(2^3)^0$ (3)
 - 4.2 'n Motor lê 'n afstand van 315 km in 3 uur af. Hoe lank sal dit die motor neem om 'n afstand van 210 km teen dieselfde spoed af te lê?
A car travels a distance of 315 km in 3 hours. How long will it take the car to travel a distance of 210 km if it drives at the same average speed? (4)
- [7]

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MEMORANDUM

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VRAAG 1/QUESTION 1

- 1.1) -2 ✓
 1.2) $4 - 27$ ✓
 $= -23$ ✓
 1.3) $-20 + 25$ ✓
 $= 5$ ✓
 1.4) $-4 + 1$ ✓
 $= -3$ ✓
 1.5) $9 - (-3)$ ✓
 $= 12$ ✓
 1.6) $5 - 1$ ✓
 $= 4$ ✓
 1.7) $6^2 + 9 \times 5$ ✓
 $= 36 + 9 \times 5$ ✓
 $= 20$ ✓
 1.8) $\frac{25}{49}$ ✓
 $\sqrt{\frac{9}{4}}$ ✓
 $= \frac{3}{2}$ ✓
 1.10) $9(1)$ ✓
 $= 9$ ✓

VRAAG 2/QUESTION 2

- 2.1) $18 = 2 \times 3^2$ ✓
 $20 = 2^2 \times 5$ ✓
 KGV = $2^2 \times 3^2 \times 5 = 180$ ✓
 GGD = 2 ✓

- (1) ✓ -2
 $\checkmark 4 \checkmark -27$
 (3) ✓ -23
 $\checkmark -20 \checkmark 25$
 (3) ✓ 5
 $\checkmark -4 \checkmark 1$
 (3) ✓ -3
 $\checkmark 9 \checkmark -3$
 (3) ✓ 12
 $\checkmark 5 \checkmark 1$
 (3) ✓ 4
 $\checkmark 6^2 \checkmark 9 \checkmark 5$
 (5) ✓ 20
 (1) ✓ $\frac{25}{49}$
 $\checkmark \sqrt{\frac{9}{4}}$
 (2) ✓ $\frac{3}{2}$
 $\checkmark 1$
 (2) ✓ 9
 [26]

- ✓ 2×3^2
 $\checkmark 2^2 \times 5$
 $\checkmark 2^2 \times 3^2 \times 5$
 (4) ✓ 2

- 2.2.1) $2/7056$
 $2/3528$
 $2/1764$
 $2/882$
 $3/441$
 $3/147$
 $7/49$
 $7/7$
 1

$2^4 \times 3^2 \times 7^2$ ✓ ✓ ✓

- 2.2.2) $\sqrt{2^4 \times 3^2 \times 7^2}$
 $= 2^2 \times 3 \times 7$ ✓
 $= 84$ ✓

VRAAG 3/QUESTION 3

- 3.1) $4 : 3 : 5$ ✓
 3.2) $\frac{2}{5} \times \frac{1500}{1} = 600$ ✓
 $\frac{3}{5} \times \frac{1500}{1} = 900$ ✓
 3.3) $\frac{7}{5} \times \frac{35}{1} = 49$ ✓
 3.4.1) $1,26 \times 10^9$ ✓
 3.4.2) 8×10^{13} ✓

VRAAG 4/QUESTION 4

- 4.1.1) 7^4 ✓
 4.1.2) 2^{13} ✓
 4.1.3) 1 ✓
 4.2) $\frac{315}{3} = 105$ ✓
 $\frac{210}{105} = 2$ ✓

(3) ✓ $2^4 \checkmark 3^2 \checkmark 7^2$

(2) ✓ 84
 [9]

(1) ✓ $4 : 3 : 5$

✓ 600

(2) ✓ 900

(3) ✓ $\frac{7}{5} \checkmark \frac{35}{1} \checkmark 49$

(1) ✓ $1,26 \times 10^9$

(1) ✓ 8×10^{13}
 [8]

✓ 7^4

✓ 2^{13}

(3) ✓ 1

✓ $\frac{315}{3} \checkmark 105$

(4) ✓ $\frac{210}{105} \checkmark 2$

[7]

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