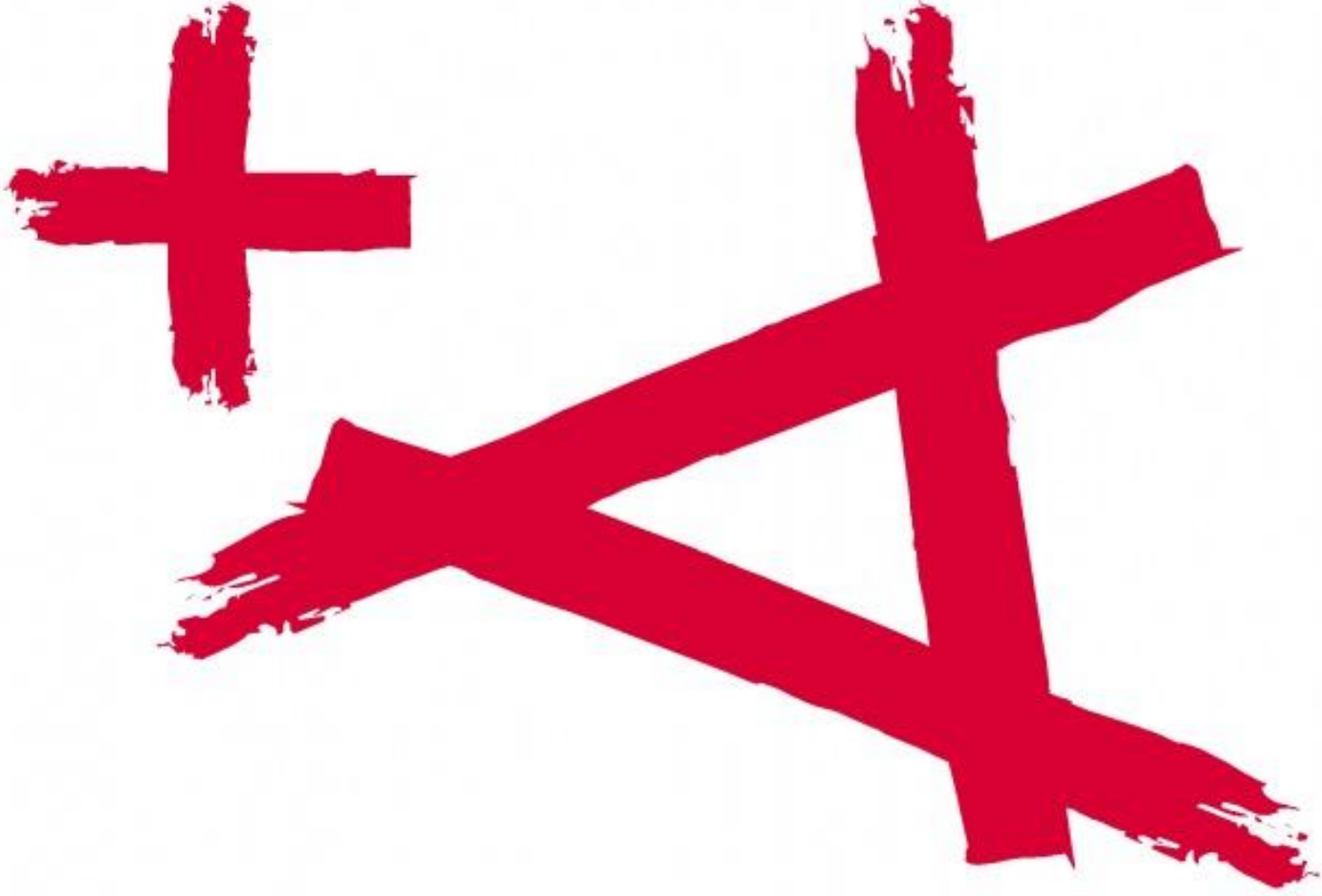




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WISKUNDE TOETS

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 bewerkinge. / 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 $\left(\frac{5}{2}\right)^2$ (1)
- 1.9 $\sqrt[4]{2\frac{1}{4}}$ (2)
- 1.10 $9(-9)^\circ$ (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 prime factors. (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 $\sqrt[5]{7056}$
Use its prime factors and calculate $\sqrt[5]{7056}$ (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:
3.4.1 1 256 000 000 (1)
3.4.2 80 biljoen / billion (1) [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 $7^5 \div 7$ (3)
4.1.2 $2^7 \times 2^6$ (3)
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]

TOTAAL: 50

MEMORANDUM

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VRAAG 1/QUESTION 1

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

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 ✓
(3) $4 - 27$ ✓
(3) $-20 + 25$ ✓
(3) $4 + 1$ ✓
(3) $9 - 3$ ✓
(3) $5 - 1$ ✓
(3) $6^2 + 9 \times 5$ ✓
(5) $\frac{25}{49}$ ✓
(1) $\sqrt{\frac{9}{4}}$ ✓
(2) $9(1)$ ✓
(2) 9 ✓

[26]

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

$$3.1) 4 : 3 : 5$$

$$3.2) \frac{2}{5} \times \frac{1500}{1} = 600$$

$$3.3) \frac{7}{5} \times \frac{35}{1} = 49$$

$$3.4.1) 1,26 \times 10^9$$

$$3.4.2) 8 \times 10^{13}$$

VRAAG 4/QUESTION 4

$$4.1.1) 7^4$$

$$4.1.2) 2^{13}$$

$$4.1.3) 1$$

$$4.2) \frac{315}{3} = 105$$

$$\frac{210}{105} = 2$$

$$(3) \sqrt{2^4 \times 3^2 \times 7^2}$$

$$(2) \sqrt{2^2 \times 3 \times 7}$$

[9]

$$(1) \sqrt{4 : 3 : 5}$$

$$\sqrt{600}$$

$$(2) \sqrt{900}$$

$$(3) \sqrt{\frac{7}{5} \times \frac{35}{1} \times 49}$$

$$(1) \sqrt{1,26 \times 10^9}$$

$$(1) \sqrt{8 \times 10^{13}}$$

[8]

$$\sqrt{7^4}$$

$$\sqrt{2^{13}}$$

$$\sqrt{1}$$

$$(3) \sqrt{\frac{315}{3} \times 105}$$

$$(4) \sqrt{\frac{210}{105} \times 2}$$

[7]

TOTAAL: 50