# Wiskunde Gr 8 Mathematics

# Telgetalle / Whole nr's (2)

## 1. Priemfaktorisering / Prime factorization

- Priemgetalle het SLEGS 2 faktore
- Prime numbers ONLY have 2 factors

▷ = "Leertjie-metode" "Ladder method"

a) 24

| | | |
|---|---|---|
| 2 ← 24 | | Kleinste priemgetal wat in 24 kan indeel? (2)<br>1. Smallest prime nr that can divide into 24? |
| 2 ← 12 | $(\frac{24}{2}=12)$ | 2. . . . . 12 kan indeel? (2)<br>divide into 12? |
| 2 ← 6 | $(\frac{12}{2}=6)$ | 3 . . . . . 6 kan indeel? (2)<br>divide into 6? |
| 3 ← 3 | $(\frac{6}{2}=3)$ | 4. . . . . 3 kan indeel? (3)<br>divide into 3? |
| 1 | | |

↳ "When you end on 1, you are done" ☺

$\therefore = 2 \times 2 \times 2 \times 3$

$= 2^3 \times 3$

b) 45

| | |
|---|---|
| 3 | 45 |
| 3 | 15 |
| 5 | 5 |
| | 1 |

↳ Done ✓

$\therefore = 3 \times 3 \times 5$

$= 3^2 \times 5$

c) 180

| | |
|---|---|
| 2 | 180 |
| 2 | 90 |
| 3 | 45 |
| 3 | 15 |
| 5 | 5 |
| | 1 → Done ✓ |

$\therefore = 2 \times 2 \times 3 \times 3 \times 5$

$= 2^2 \times 3^2 \times 5$

## Toets met sakrekenaar / Check with calculator:

1. [24]
2. [=]
3. SHIFT [O] FACT
4. [0 999] $= 2^3 \times 3$

8.1.2
②

## 2. KGV en GGF / LCM and HCF

KGV: Kleinste gemeenskaplike veelvoud – maaltafels
LCM: Lowest common Multiple – time tables

GGF: Grootste gemeenskaplike faktor – getalle wat kan indeel
HCF: Highest common factor – numbers that divide into another number

## Leertjie-metode / Ladder-method

a) 15 en 18

| 3 ← 15 | 2 ← 18 |
|---|---|
| 5 \| 5 | 3 \| 9 |
| 1 ✓ | 3 \| 3 |
| | 1 ✓ |

- Deel met kleinste priemgetal
  Divide with smallest prime nr
- Moet met 1 eindig
  Have to end on 1

"When you get 1, you're done"

HCF / GGF = ③ × 5 = 2 × ③ × 3
LCM / KGV = 3 × 5¹ = 2¹ × 3②

- Skryf in volgorde
  Write in order
- Skryf met eksponente
  Write with exponents

GGF / HCF = 3

- omkring alles wat dieselfde is.
  circle everything that is the same.

KGV / LCM = 2¹ × 3² × 5¹
= 90

- skryf al die verskillende grondtalle MET hoogste eksp.
  Write down all the different bases PLUS highest exp.

b) 180 en 336

| 2 \| 180 | 2 \| 336 |
|---|---|
| 2 \| 90 | 2 \| 168 |
| 5 \| 45 | 2 \| 84 |
| 3 \| 9 | 2 \| 42 |
| 3 \| 3 | 3 \| 21 |
| 1 | 7 \| 7 |
| | 1 |

8.1.2
③

| | 180 | 336 |
|---|---|---|
| GGF / HCF | $= 2 \times 2 \times 3 \times 3 \times 5$ | $= 2 \times 2 \times 2 \times 2 \times 3 \times 7$ |
| KGV / LCM | $= 2^2 \times 3^2 \times 5^1$ | $= 2^4 \times 3 \times 7^1$ |

GGF / HCF $= 2 \times 2 \times 3 = 12$

KGV / LCM $= 2^4 \times 3^2 \times 5 \times 7 = 5040$

Toets op Casio sakrekenaar / Test on Casio calculator:

- [180]
- [=]
- [O] SHIFT
- [0999] FACT