



CAMI Wiskunde: Grade 12

12.2 Getalpatrone, rye en reekse

12.2 Meetkundige rye

1. Bepaal watter term in die ry $-2 ; 8 ; -32 ; \dots$ gelyk aan -512 sal wees.
2. In 'n meetkundige ry is $T_4 = -16$ en $T_9 = 512$. Bepaal die eerste drie terme van die ry.
3. Die waarde van die eerste term in 'n meetkundige ry is -1 en $T_2 = 2$. Bereken die waarde van T_7 .
4. Beskou die ry $3 ; -9 ; 27 ; \dots$
Watter term sal -729 wees?
5. Die eerste term in 'n meetkundige ry is 2 en $T_6 = -2048$. Bepaal die konstante verhouding tussen die terme.
6. In 'n meetkundige ry is $T_8 = 6561$ en die konstante verhouding is -3 . Bepaal die eerste drie terme van die ry.
7. Bepaal die meetkundige gemiddeld van $-3q^4$ en $-48q^8$.
8. Plaas twee meetkundige gemiddeldes tussen 2 en -16 .
9. Plaas twee meetkundige gemiddeldes tussen 2 en 128 .
10. In 'n meetkundige ry is $T_3 = -12$ en $T_4 = -24$. Bepaal die eerste drie terme van die ry.



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MEMO

Meetkundige rye [5.6.1.1, 5.6.1.2; 5.6.2]

1. $-2 ; 8 ; -32 ; \dots$

$$a = -2 ; r = -4$$

$$T_n = ar^{n-1}$$

$$-512 = (-2)(-4)^{n-1}$$

$$256 = (-4)^{n-1}$$

$$256 = (-4)^n \cdot (-4)^{-1}$$

$$-1024 = -4^n$$

$$\therefore n = 5$$

2.

$$T_4 = -16$$

$$-16 = ar^3$$

$$T_9 = 512$$

$$512 = ar^8$$

$$\frac{ar^8}{ar^3} = \frac{512}{-16}$$

$$\therefore r^5 = -32$$

$$\therefore r = -2$$

$$\therefore a = 2$$

MR: $2 ; -4 ; 8$

3. $T_1 = a = -1$

$$T_2 = ar = 2$$

$$\therefore r = -2$$

$$T_7 = ar^6$$

$$T_7 = (-1)(-2)^6$$

$$T_7 = -64$$



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4. $3 ; -9 ; 27 ; \dots$

$$a = 3 ; r = -3$$

$$T_n = ar^{n-1}$$

$$-729 = (3)(-3)^{n-1}$$

$$-243 = (-3)^n (-3)^{-1}$$

$$729 = -3^n$$

$$(-3)^6 = (-3)^n$$

$$\therefore n = 6$$

5. $a = 2$ en $T_6 = -2048$

$$T_6 = -2048$$

$$-2048 = (2)(r)^5$$

$$-1024 = r^5$$

$$(-4)^5 = r^5$$

$$\therefore r = -4$$

6. $T_8 = 6561$ en $r = -3$

$$T_8 = ar^7$$

$$6561 = a(-3)^7$$

$$\therefore a = -3$$

$$\text{MR: } -3 ; 9 ; -27$$

7.

$$GM = \sqrt{-3q^4 \times -48q^8}$$

$$GM = \sqrt{144q^{12}}$$

$$GM = \pm 12q^6$$

8.

$$T_1 = a = 2$$

$$T_4 = -16$$

$$-16 = (2)r^3$$

$$-8 = r^3$$

$$\therefore r = -2$$

$$\text{MR: } 2 ; -4 ; 8 ; -16$$



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9.

$$T_1 = a = 2$$

$$T_4 = 128$$

$$128 = (2)r^3$$

$$64 = r^3$$

$$\therefore r = 4$$

MR: 2 ; 8 ; 32 ; 128

10.

$$T_3 = -12 \quad \text{en}$$

$$-12 = ar^2$$

$$T_4 = -24$$

$$-24 = ar^3$$

$$\frac{ar^3}{ar^2} = \frac{-24}{-12}$$

$$r = 2$$

$$a = -3$$

MR: -3 ; -6 ; -12

