

Algebra-Aufgaben: Mengenlehre 2

1. Stelle die folgenden Mengen in der aufzählenden Form dar:

(a)  $\{x \in \mathbb{N} \mid x \geq 24\}$

(b)  $\{x \in \mathbb{N} \mid x < 12\}$

(c)  $\{q \in \mathbb{N} \mid q < 12\}$

(d)  $\{r \in \mathbb{N} \mid 0 < r < 33\}$

(e)  $\{s \in \mathbb{N} \mid 0 \leq s < 34\}$

(f)  $\{x \in \mathbb{N} \mid 2 \cdot x < 10\}$

(g)  $\{x \in \mathbb{N} \mid x \in \mathbb{V}_4\}$

(h)  $\{t \in \mathbb{T}_{100} \mid t \leq 66\}$

(i)  $\{q \in \mathbb{N}_u \mid q < 45 \text{ und } q > 32\}$

(j)  $\{y \in \mathbb{V}_4 \mid y \in \mathbb{V}_6 \text{ und } y \leq 64\}$

(k)  $\{x \in \mathbb{N}_g \mid x = 3 \cdot t, t \in \{1, 2, 3, \dots, 9\}\}$

(l)  $\{w \in \mathbb{N}_g \mid w = 4 \cdot t, t \in \{1, 2, 3, 4\}\}$

(m)  $\{a \in \mathbb{N} \mid a = 2 + 5 \cdot r, r \in \{10, 11, 12, 13, 14, 15\}\}$

(n)  $\{b \in \mathbb{N} \mid b = 3 + 5 \cdot r, r \in \{1, 2, 3, 4, 5\}\}$

(o)  $\{c \in \mathbb{N} \mid c = 5 + 2 \cdot s, s \in \{12, 27, 54\}\}$

(p)  $\{d \in \mathbb{N} \mid d = 5 + 2 \cdot s, s \in \{1, 2, 3, \dots, 99, 100\}\}$

(q)  $\{s \in \mathbb{N} \mid 3 \cdot s \in \mathbb{T}_{12}\}$

(r)  $\{l \in \mathbb{N} \mid 5 \cdot l \in \mathbb{T}_{12}\}$

- (s)  $\{t \in \mathbb{N}_u \mid q^2 \in \mathbb{N}_g\}$
- (t)  $\{h \in \mathbb{N} \mid h = h \cdot h\}$
- (u)  $\{k \in \mathbb{N}_0 \mid k = k \cdot k\}$
- (v)  $\{e \in \mathbb{N} \mid 33 \cdot e + f > 22\}$
- (w)  $\{t \in \mathbb{N}_u \mid 45 < 5 \cdot t < 50\}$
- (x)  $\{g \in \mathbb{N} \mid 2 \cdot g = 1\}$

2. Stelle die folgenden Mengen in der mathematisch beschreibenden Form dar:

- (a)  $\{0, 1, 2, 3, 4, 5\}$
- (b)  $\{1, 2, 3, 4, 5\}$
- (c)  $\{5, 6, 7, 8, 9\}$
- (d)  $\{9, 8, 7, 6, 5\}$
- (e)  $\{88, 89, 90, \dots, 12'345\}$
- (f)  $\{45, 46, 47, \dots, 87, 88\}$
- (g)  $\{22, 33, 44, \dots\}$
- (h)  $\{5, 10, 15, \dots\}$
- (i)  $\{9, 18, 27, \dots, 90\}$
- (j)  $\{12, 15, 18, 21, \dots\}$
- (k)  $\{1, 4, 9, 16, 25, \dots\}$

- (l)  $\{1, 17\}$
- (m)  $\{33, 36, 39, 42, 45, 48\}$
- (n)  $\{7, 14, 21, 28, 35, 42, 49, \dots\}$
- (o)  $\{2, 10, 18, 26, \dots\}$
- (p)  $\{4, 9, 14, 19, 24, \dots\}$
- (q)  $\{3, 10, 17, 24, 31\}$
- (r)  $\{2, 7, 12, 17, \dots\}$
- (s)  $\{11, 18, 25, 32, \dots, 711\}$
- (t)  $\{13, 25, 37, 49, \dots, 97\}$
- (u)  $\{2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31\}$