ABSOLUTNÍ HODNOTA REÁLNÉHO ČÍSLA

1) Znázorněte na číselné ose a zapište danou množinu výčtem prvků nebo pomocí intervalů:

a) $A = \{x \in R;\ |x| = 5\}$ $[\![A = \{-5; 5\}]\!]$

b) $B = \{x \in R;\ |x| \leq 8\}$ $[\![B = \langle -8; 8\rangle]\!]$

c) $C = \{x \in R;\ |x| > 4\}$ $[\![C = (-\infty;\ -4) \cup (4;\ +\infty)]\!]$

d) $D = \{x \in R;\ |x| = 3\}$ $[\![D = \{-3; 3\}]\!]$

e) $E = \{x \in R;\ |x| \geq 2\}$ $[\![E = (-\infty;\ -2\rangle \cup \langle 2;\ +\infty)]\!]$

f) $F = \{x \in R;\ |x| < 6\}$ $[\![F = (-6; 6)]\!]$

g) $G = \{x \in R;\ |x| = -6\}$ $[\![G = \emptyset]\!]$

h) $H = \{x \in R;\ |x - 2| = 5\}$ $[\![H = \{-3; 7\}]\!]$

i) $I = \{x \in R;\ |x + 3| > 8\}$ $[\![I = (-\infty;\ -11) \cup (5;\ +\infty)]\!]$

j) $J = \{x \in R;\ |x - 7| \leq 3\}$ $[\![J = \langle 4; 10\rangle]\!]$

k) $K = \{x \in R;\ |x + 4| = 3\}$ $[\![K = \{-7;\ -1\}]\!]$

l) $L = \{x \in R;\ |x - 2| < 6\}$ $[\![L = (-4; 8)]\!]$

m) $M = \{x \in R;\ |x + 6| \geq 4\}$ $[\![M = (-\infty;\ -10\rangle \cup \langle -2;\ +\infty)]\!]$

2) Znázorněte na číselné ose a zapište danou množinu pomocí intervalů. Určete průnik a sjednocení těchto intervalů.

a) $A = \{x \in R;\ |x| \leq 4\}, B = \{x \in R;\ |x| < 5\}$ $[\![A \cap B = \langle -4; 4\rangle; A \cup B = (-5; 5)]\!]$

b) $A = \{x \in R;\ |x| \leq 3\}, B = \{x \in R;\ |x| > 2\}$

$[\![A \cap B = \langle -3;\ -2) \cup (2; 3\rangle; A \cup B = R]\!]$

c) $A = \{x \in R;\ |x| > 2\}, B = \{x \in R;\ |x| \geq 4\}$

$[\![A \cap B = (-\infty;\ -4\rangle \cup \langle 4;\ +\infty); A \cup B = (-\infty;\ -2) \cup (2;\ +\infty)]\!]$

d) $A = \{x \in R;\ |x + 2| \leq 4\}, B = \{x \in R;\ |x - 2| \leq 6\}$

$[\![A \cap B = \langle -4; 2\rangle; A \cup B = \langle -6; 8\rangle]\!]$

e) $A = \{x \in R;\ |x - 1| \leq 3\}, B = \{x \in R;\ |x - 3| > 2\}$

$[\![A \cap B = \langle -2; 1); A \cup B = (-\infty; 4\rangle \cup (5;\ +\infty)]\!]$

3) Vypočítejte:

a) $|2 - 5| + |3 - (-4)| - |-6 + (-3)|$ $[\![1]\!]$

b) $2 \cdot |4 - 2| + 3 \cdot |-6 + 4| - |-8 + 5|$ $[\![7]\!]$

c) $4 \cdot |-2 + 2 \cdot |5 - 7| - 4|$ $[\![8]\!]$

d) $|-|-|-2 + 5| - 8| + 2 \cdot |4 - 6| + 2|$ $[\![5]\!]$