

Proprietatile modulului

1. $|a| \geq a$.
2. $|a| \geq -a$.
3. $|a| = |-a|$.
4. $|a| \geq 0$ si
 $|a| = 0$ daca si numai daca $a = 0$.
5. $|a| = a$ daca si numai daca $a \geq 0$.
6. $|a| = -a$ daca si numai daca $a \leq 0$.
7. $|a| = \sqrt{a^2}$.
8. $|a + b| \leq |a| + |b|$ si
 $|a + b| = |a| + |b|$ daca si numai daca $ab \geq 0$.
9. $|a \cdot b| = |a| \cdot |b|$.
10. $\left| \frac{a}{b} \right| = \frac{|a|}{|b|}$.
11. $|a| = b, b \geq 0 \Leftrightarrow a = \pm b \Leftrightarrow \begin{cases} a = b, \\ a = -b. \end{cases}$
12. $|a| < b, b > 0 \Leftrightarrow -b < a < b \Leftrightarrow \begin{cases} a < b, \\ a > -b. \end{cases}$
13. $|a| > b, b > 0 \Leftrightarrow \begin{cases} a > b, \\ a < -b. \end{cases}$
14. $|a| = |b| \Leftrightarrow (a - b)(a + b) = 0 \Leftrightarrow a = \pm b$.
15. $|a| > |b| \Leftrightarrow (a - b)(a + b) > 0 \Leftrightarrow a \in (-\infty; -|b|) \cup (|b|; +\infty) \Leftrightarrow -|a| < b < |a|$.
16. $|a|^2 = a^2$.