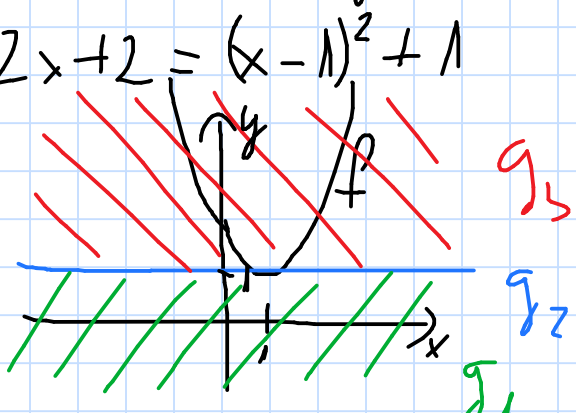
| $p$ | $q$ | $p \wedge q$ | $p \to q$ | $p \Leftrightarrow q$ | $\neg p$ |
|---|---|---|---|---|---|
| I | I | I | H | I | H |
| I | H | H | H | H | H |
| H | I | H | I | H | I |
| H | H | H | I | I | I |

| $A$ | $B$ | $A \vee \neg B \Leftrightarrow (B \to A)$ |
|---|---|---|
| I | I | I |
| I | H | H |
| H | I | I |
| H | H | I |

| $p$ | $q$ | $p \vee q$ | $q \to p$ | $\neg p \vee q \Leftrightarrow$ | $p \to q$ |
|---|---|---|---|---|---|
| I | I | I | I | I | I |
| I | H | I | H | H | H |
| H | I | I | I | I | I |
| H | H | H | I | I | I |

$f(x) = x^2 - 2x + 2 \,/\, g(x) = a$

$x^2 - 2x + 2 = (x-1)^2 + 1$




a) $a < 1$

b) $a = 1$

c) $a > 1$

$$A(n) = \frac{n^4 + n + 1}{n^2 + 2} > 100$$

a) $\frac{1}{2} > 100 \to H$

$\frac{3}{2} > 100 \to H$

$\frac{18}{6} = 3 > 100 \to H$

b-c) NRA: $\frac{n^4}{3n^2} = \frac{n^2}{3}$ $(n \geq 1)$

$\frac{n^2}{3} > 100$

$n^2 > 300$

$n > \sqrt{300}$

Legyen 20.

Az állítások igazak,

pl. $N = 26$ esetén.

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$\exists \varepsilon > 0 \; \forall N \in \mathbb{N} \; \exists n \in \mathbb{N} \; n \geq N : \frac{1+n}{1+n^2} \geq \varepsilon$

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$x - 5 < 21$

$x < 26$ Igaz, pl $y = 25$

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| | |
|---|---|
| $\exists! N \in \mathbb{N} \; \forall n \in \mathbb{N} : N \geq n$ | H |
| $\exists! A \in (0;1] \; \forall a \in (0;1] : A \geq a$ | I |
| $\exists! A \in (0;1] \; \forall a \in (0;1] : A \leq a$ | I |
| $\exists n \in \mathbb{N} : 3 \nmid n$ | I |
| $\forall n \in \mathbb{R} : n^2 \neq -1$ | I |
| $\exists n \in \mathbb{R} : n \notin \mathbb{Q}$ | I |
| $\forall n \in \mathbb{R} : \frac{1}{n} \in \mathbb{R}$ | H |
| $\forall n \in \mathbb{N}^+ : \frac{1}{n} \in \mathbb{Q}$ | I |

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$x^2 + x = 0$

$x(x+1) = 0$

$x_1 = 0 \quad x_2 = -1$

$x^2 + x < 0 \Leftrightarrow x > -1 \wedge x < 0 \Rightarrow x > -1$

$x^2 + y^2 \geq 0 \wedge x^2 + y^2 \leq 0 \Leftrightarrow x^2 + y^2 = 0 \Rightarrow x = 0 \wedge y = 0$

(def)

$x^2 + 2xy + y^2 = x^2 - 2xy + y^2 \Leftrightarrow 4xy = 0 \Leftrightarrow xy = 0 \Leftrightarrow x = 0 \vee y = 0$

---

$\exists K > 0 \; \forall x > K \; (x > 0) \; x \in \mathbb{R}^+ : \frac{\sqrt{x}}{x} < \frac{1}{100}$

$100\sqrt{x} < x$

$10000x < x^2$ Igaz, pl.

$10000 < x$ $K = 10000$

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$\forall \varepsilon > 0 \; \exists K > 0 \; \forall x > K \; x \in \mathbb{R}^+ : \frac{\sqrt{x}}{x} < \varepsilon$ Igaz?

HELP

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$\exists x, t \in [1;2] \; x, t \in \mathbb{R} \; |x - t| < \frac{1}{3} : |\sqrt{x} - \sqrt{t}| < \frac{1}{6}$

HELP