

$(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}) = \frac{\sqrt{2}}{2} + i \frac{\sqrt{2}}{2}$

$|z| = \sqrt{\frac{\sqrt{2}}{2}^2 + \frac{\sqrt{2}}{2}^2} = 1$
 $\cos \varphi = \frac{\sqrt{2}}{2} \quad \sin \varphi = \frac{\sqrt{2}}{2}$
 $\varphi = \frac{\pi}{4}$
 $z = \cos(\frac{\pi}{4}) + i \sin(\frac{\pi}{4}) = e^{i \frac{\pi}{4}}$
 $z^n = (\cos(\frac{\pi}{4}) + i \sin(\frac{\pi}{4}))^n = \cos(\frac{n\pi}{4}) + i \sin(\frac{n\pi}{4})$
 $\cos \frac{n\pi}{4} + i \sin \frac{n\pi}{4} = \cos \frac{\pi}{4} + i \sin \frac{\pi}{4}$

\downarrow
 $-\frac{\pi}{6} = -\frac{\pi}{6} + 2k\pi$
 $-\frac{\pi}{6} = -\frac{\pi}{6} + 2k\pi$
 $-\pi = -\pi + 2k\pi$
 $-\pi = -\pi + 2k\pi$
 $n = 1 + 2k$

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$f: \mathbb{Z} \times \mathbb{Z} \rightarrow \mathbb{Z}^2$

$f(x,y) = \{x, y, x \cdot y\}$

$f(1,2) = \{2, 1, 2\}$

$|f(x,y)| = 1$

$f(x,y) = \{x, y, x \cdot y\}$

$x = y$
 $x = x \cdot y \Leftrightarrow x(1-y) = 0$
 $y = x \cdot y \Leftrightarrow y(1-x) = 0$

$f((0,0)) = \{0, 0, 0\}$
 $f((1,1)) = \{1, 1, 1\}$

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$(ab) \in \mathbb{Z} \Leftrightarrow a-b \in \mathbb{Z}$

R: $a-a=0 \in \mathbb{Z} \Rightarrow (a,a) \in \mathcal{P}$

S: $(ab) \in \mathbb{Z} \Rightarrow a-b \in \mathbb{Z} \Rightarrow \exists k \in \mathbb{Z}: a-b=k$
 $a-b=k$
 $b-a=-k \in \mathbb{Z}$
 $(b,a) \in \mathcal{P}$

AS: $(2,1) \in \mathcal{P} \wedge (1,2) \in \mathcal{P} \wedge 1+2$

T: $(a,b) \in \mathcal{P} \wedge (b,c) \in \mathcal{P} \Rightarrow a-b \in \mathbb{Z} \wedge b-c \in \mathbb{Z} \Rightarrow$
 $a-c = \underbrace{a-b}_{\in \mathbb{Z}} + \underbrace{b-c}_{\in \mathbb{Z}} \in \mathbb{Z} \Rightarrow (a,c) \in \mathcal{P}$

$(\pi, e) \notin \mathcal{P}$
 $(e, \pi) \in \mathcal{P}$
 $(1,2) \in \mathcal{P} \wedge (1,3) \in \mathcal{P}$

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vdace $E \Leftrightarrow$ vzdklad

$\{a, b, c\}$

$\{a, a, (b, b), (c, c)\}$

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$a|b \Leftrightarrow |a| \leq |b|$

$a|b \wedge b|a \Rightarrow |a| \leq |b| \wedge |b| \leq |a|$
 $|a| \leq |a|$

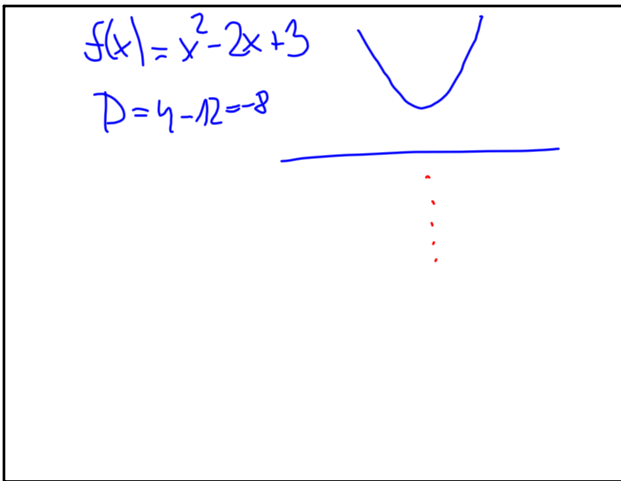
A-S

$1 \Rightarrow 1 \quad \checkmark$
 $1 \Rightarrow 0 \quad \times$
 $\boxed{0} \Rightarrow 1 \quad \checkmark$
 $\boxed{0} \Rightarrow 0 \quad \checkmark$

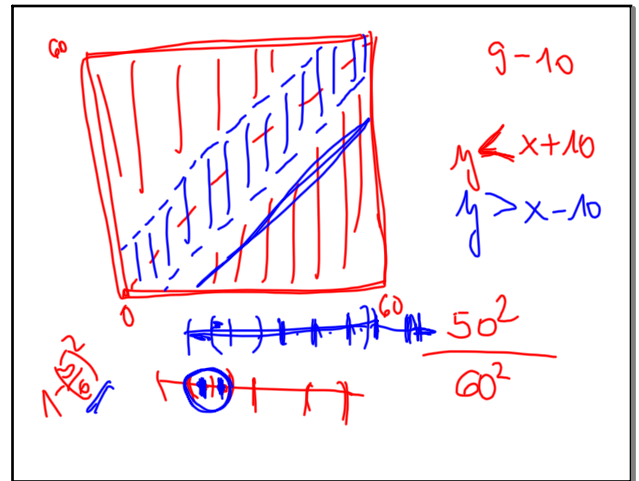
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$a \begin{cases} a+c=3 \\ b+c=5 \\ a+b=4 \end{cases}$

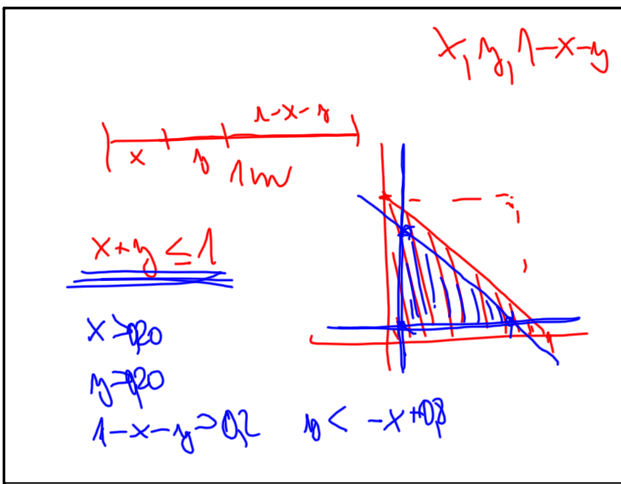
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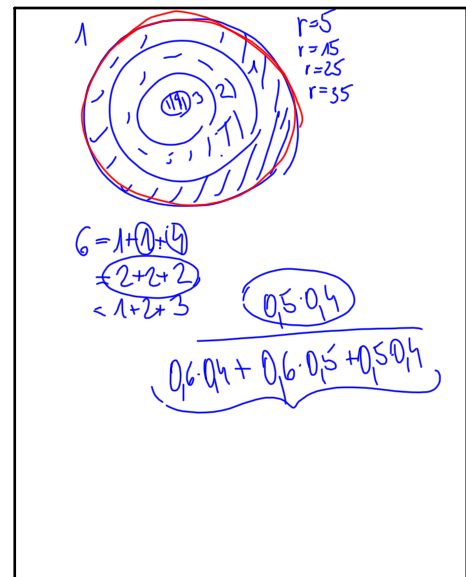
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