Let \( u \in \text{ran}(T) \) a such that \( u^2 = 2m \). Then, we have

\[
\begin{align*}
\bar{p} & = \left\{ \text{such that } u^2 = 2m \right\} \\
\bar{p} & = \left\{ \text{ran}(T) \right\}
\end{align*}
\]

Proof:

Direct Part:

\[
\begin{align*}
\left\{ \text{ran}(T) \right\} & \subset \left\{ \text{such that } u^2 = 2m \right\} \\
\left\{ \text{ran}(T) \right\} & \subset \bar{p}
\end{align*}
\]
\[ n^2 = 2(2m^2 + m) + 1 \]

\[ n^2 = (2m+1)^2 = 4m^2 + 4m + 1 \]

\[ \text{Case where } n = 2m+1 \]

For \( n \) even and \( n \) odd,

\[ (n \text{ even } \rightarrow \text{ n odd}) \]

\[ (n \text{ odd } \rightarrow \text{ n even}) \]

Let's start by contradiction, \( n^2 \equiv 1 \pmod{4} \),

\[ \exists p \in \mathbb{Z} \text{ s.t. } n \equiv \pm 1 \pmod{4} \]

\[ n^2 \equiv 1 \pmod{4} \]

\[ \exists p \in \mathbb{Z} \text{ s.t. } n \equiv \pm 1 \pmod{4} \]
\[ q = \frac{m}{p} \quad (g,c \in \mathbb{N}_m, n = 1) \]

For \( n \), we choose such that \( m^2 \) and \( m \) are not in the same numerator if and only if \( g \) is a real-root number \( \sqrt{\text{det} \mathbf{A}} \) if and only if \( m \) is even and \( n \) is odd.

\[ n - 2 \leq 0 \]

\[ n \in \mathbb{Z} \]

\[ \text{even} = n \quad \text{even} \]

\[ \text{odd} = n \quad \text{odd} \]
\[ n_2 = m_2 = n_2 \]
\[ m_3 = n \quad (m, n) = n_2 \]
\[ m_3 = n \quad (m, n) = \text{gcd}(n) = 1 \]

Assume \( n \) is a perfect square.

\[ n = p^2 \quad \text{for some integer } p \]

Therefore, \( n \) is an integer number.
\[
\text{Common denominator of } \gcd(n, m) = 1
\]
\[
\Rightarrow 2 \text{ is a factor of } n \text{ and in }
\]
\[
m \equiv 2 \text{ in } m_2 = 2k
\]
\[
\Rightarrow \text{and } k \text{ (where } k \text{ is even)}
\]

By the previous result, \( n \) is even

\[
\Rightarrow n_2 = 4k
\]
\[
\Rightarrow \text{and } k \text{ (where } k \text{ is even)}
Prop: There are two irrational numbers $x, y$ such that $(x^y)$ is rational.

Sol: Let $s = \sqrt{2}$, $x = \sqrt{2}$
Case 1: \( r = \frac{r_2}{r_1} \) is exactly 1.

Case 2: \( r = \frac{r_2}{r_1} \) is not exactly 1.

Consolidate \( r = \frac{r_2}{r_1} \).
\[(\exists y \in E \forall x \in A) \Leftrightarrow (\exists y \in E \forall x \in A) \Leftrightarrow (\exists y \in E \forall x \in A)
\]

\[ (\exists y \in E \forall x \in A) \Leftrightarrow (\exists y \in E \forall x \in A) \]

\[ (\exists y \in E \forall x \in A) \Leftrightarrow (\exists y \in E \forall x \in A) \]

\[ \left[ x \right] \uparrow \delta \eta \leq \delta \eta \leq \delta \eta \leq \delta \eta \leq \delta \eta \]

\[ (\exists y \in E \forall x \in A) \Leftrightarrow (\exists y \in E \forall x \in A) \]
Set $S = \{1, \text{pen}, \text{computer}, \text{mouse}\}$

(1) A set is a collection of objects.

(2) $\text{Chap. 2 (Set S)}$