1. Suppose that $a, b \in \mathbb{R}$. If $a < b$, then $a < \dfrac{a+b}{2} < b$.

2. Suppose that $a, b \in \mathbb{R}$. If $a < b$ then $a^2 < b^2$.

3. Suppose that $a, b \in \mathbb{R}$. If $a, b > 0$, then $a < b \Leftrightarrow a^2 < b^2$.

4. Suppose that $a, b \in \mathbb{R}$. If $a, b > 0$, then $a < b \Leftrightarrow \sqrt{a} < \sqrt{b}$

5. Suppose that $a, b \in \mathbb{R}$. If $a, b > 0$, then $\sqrt{ab} \le \dfrac{a+b}{2}$.

6. Suppose that $a, b \in \mathbb{R}$. If $a, b > 0$, then $\sqrt{a^2 + b^2} \le a + b$.

7. Suppose that $a, b \in \mathbb{R}$. Then $|a - b| \ge |a| - |b|$.

8. Suppose that $a, b, c, d \in \mathbb{R}$, with $a < b$ and $c < d$. Then $a + c < b + d$.

9. Suppose that $a, b, c, d \in \mathbb{R}$, with $a < b$ and $c < d$. Then $a - c < b - d$.

10. Suppose that $a, b, c, d \in \mathbb{R}$, with $a < b$ and $c < d$. Then $ac < bd$.

11. Suppose that $a, b, c, d \in \mathbb{R}$, with $a < b$ and $c < d$ and $b, c > 0$. Then $ac < bd$.

12. Suppose that $a, b, c, d \in \mathbb{R}$, with $a < b$ and $c < d$. Then $\dfrac{a}{c} < \dfrac{b}{d}$.

13. Suppose that $a, b, c, d \in \mathbb{R}$, with $a < b$ and $a, b > 0$. Then $\forall n \in \mathbb{N}, a^n < b^n$.

14. Suppose that $a, b \in \mathbb{R}$. If $a^2 = b^2$, then $a = b$.

15. Suppose that r is a real number. Then $r^2 \ge r$ and $\dfrac{1}{r^2} \le \dfrac{1}{r}$.

16. Suppose that r is a real number and $r \ge 1$. Then $r^2 \ge r$ and $\dfrac{1}{r^2} \le \dfrac{1}{r}$.