

$$T(n) = T(\sqrt{n}) + 1$$

$$T(n) = (T(\sqrt{n}) + 1) + 1$$

$$T(n) = ((T(\sqrt{n}) + 1) + 1) + 1$$

$$T(n) = T(\sqrt[2^i]{n}) + \sum_{j=1}^i 1$$

$$T(n) = T(\sqrt[2^i]{n}) + i$$

$$T(\sqrt{n}) = T(\sqrt{\sqrt{n}}) + 1$$

$$\sqrt{n} = n^{\frac{1}{2}} \quad \sqrt{n^{\frac{1}{2}}} = n^{\frac{1}{4}}$$

$$\sqrt[4]{n} = n^{\frac{1}{4}}$$

$$n^{\frac{1}{2^i}} = 0$$

$$n = 0$$

$$\log n$$