

$$n = 25.$$

$$10 \rightarrow n - (1-1) = 25$$

$$19 \rightarrow n - (10-1) = 25-9 = 16 \leftarrow$$

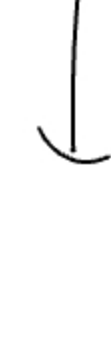
$$\downarrow [100] \rightarrow \underline{n - (100-1)} = \underline{25-99} =$$

$$n - (i-1) < 0$$

$$n < (i-1).$$

$$i: [2 \dots n-1].$$

$$n/i = 0 \rightarrow \text{not prime.}$$



$$TC = \underline{O(n)}.$$

$$i: [2 \dots \sqrt{n}]. \quad TC = O(n).$$

$$n = 20.$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$1, 2, 4, 5, 10, 20$$

factors always occur in pairs

$$n = 36.$$

$$\leftarrow \sqrt{n}$$

$$\sqrt{n} \rightarrow$$

$$1, 2, 3, 4, 6, 9, 12, 18, 36$$

$$\sqrt{n}$$

$$i: [2 \dots \sqrt{n}].$$

$$TC = \underline{O(\sqrt{n})}.$$

$$i \leq \sqrt{n}$$

$$i \cdot i \leq n$$