

Toolkit #23: Approximating Square Roots

Step 1 | Copy the problem.

$$\sqrt{40}$$

Step 2 | Find the closest perfect \square that comes before + after the # you are approx.

$$36 \quad \sqrt{40} \quad 49$$

Step 3 | Find the difference b/w each \square and decide which perfect \square is closer to your #.

$$\begin{array}{ccc} \sqrt{36} & \sqrt{40} & \sqrt{49} \\ 6 & \approx 6 & 7 \end{array}$$

Step 4 | Approx. a decimal value for your #.

$$\begin{array}{ccc} \sqrt{36} & \sqrt{40} & \sqrt{49} \\ 6 & \approx 6.3 & 7 \end{array}$$

Practice:

a.) $\sqrt{3}$

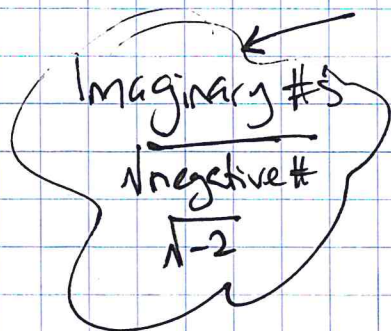
b.) $\sqrt{95}$

c.) $\sqrt{59}$

d.) $\sqrt{200}$

Toolkit # 24: Rational or Irrational?

The Number System



Real #'s

Irrational:

Rational:

A number that cannot be re-written as a fraction.

Numbers that can be rewritten as a fraction; they can also be written as a decimal that terminates or repeats.

Examples:

π , e , non-perfect \square

$\sqrt{5}$, $\sqrt{10}$, $\sqrt{2}$, $\sqrt{20}$, $\sqrt{101}$

- * go on forever (do not terminate)
- * No pattern or repeat

Examples:

5 , -5 , $\frac{1}{2}$, $\frac{1}{3}$, 0.333

2.151515 , $\sqrt{36}$