4.1 Estimating Roots

Terminology

$$\sqrt[3]{13}$$

Squares and Cubes

base	1	2	3	4	5	6	7	8	9	10	11	12	13
square													
cube													

* To effectively estimate the square root of a number we must know the perfect squares above and below the given number.

a) $\sqrt{30}$ b) $\sqrt{52}$ c) $\sqrt{312}$

* For cube roots, we must know the perfect cubes above and below the given number.

d) $\sqrt[3]{20}$ e) $\sqrt[3]{600}$ f) $\sqrt[3]{-29}$

How about these?

a) $\sqrt{-9}$ b) $\sqrt[4]{-625}$ c) $\sqrt[3]{-27}$

* It is impossible to take an [ ] root of a negative number. However, [ ] roots are possible.

a) $\sqrt{-9}$ b) $\sqrt[3]{-27}$ c) $\sqrt[4]{-625}$

* A root is an exact value if its value can be written as a [ ] (fraction). A number that repeats or terminates can always be written as a fraction.

a) b) c)

homefun: pg. 206 #1-6