

Objective: TSWBAT find square roots of numbers

Vocabulary

- ① perfect square - a number that is the product of a number times itself
- ② square root - the opposite of a perfect square
- ③ irrational number - numbers that cannot be written in the form $\frac{a}{b}$, where a and b are non zero integers ($\pi, \sqrt{2}, \sqrt{17}$)
- ④ real numbers - the set of rational and irrational numbers
- ⑤ principal square root - the positive square root of a number

Find the square roots

a) $\sqrt{25} = 5$ and -5

b) $\sqrt{\frac{1}{9}} = \frac{\sqrt{1}}{\sqrt{9}} = \frac{1}{3}$ and $-\frac{1}{3}$

c) $\sqrt{121} = 11$ and -11

d) $\sqrt{\frac{4}{9}} = \frac{\sqrt{4}}{\sqrt{9}} = \frac{2}{3}$, $-\frac{2}{3}$

Estimating Square Roots

$\sqrt{25}$

$\sqrt{36}$

$\sqrt{36}$

$\sqrt{49}$

$\sqrt{81}$

$\sqrt{100}$

$\sqrt{28}$
5 6
5.2

$\sqrt{38}$
6 7
6.2

$\sqrt{95}$
9 10
9.7

$\sqrt{100}$

$\sqrt{121}$

$\sqrt{49}$

$\sqrt{64}$

$-\sqrt{105}$

$-\sqrt{105}$
10 11
-10.2

$-\sqrt{54}$

$-\sqrt{54}$
7 8
-7.3

Classify as Rational or Irrational

* a rational number is a number whose decimal digits do not terminate or repeat *

(a) $0.818118111\dots$ I

(b) $-0.\overline{81}$ R

(c) $1\frac{2}{9}$ R

(d) $\sqrt{5}$ I

(e) $0.\overline{6}$ R

(f) $\sqrt{7}$ I

(g) -2.6457 R