Unit 2 Day 3
2-3 Irrationals + Rationals

Rationals can always be written as an integer or fraction. ($\frac{a}{b}$, where $b \neq 0$ and a and b are both integers). In decimal form, they terminate or repeat.

Irrationals never terminate or repeat. (Cannot write as $\frac{a}{b}$)

Examples of irrationals: $\pi, \sqrt{2}, , \sqrt{3}, \sqrt{5}$, etc.

If the # is rational, express as an integer or fraction. Otherwise, write "irrational".

1) $\sqrt{78}$ between 8+9
= (irr.) (64, 81)

2) $0.\overline{4}$ rat.
= $\frac{4}{9}$

3) $\sqrt{\frac{11}{25}}$
= $\frac{\sqrt{36}}{\sqrt{25}}$
= $\frac{6}{5}$

Know Perfect Squares Up To 15^2.

$1^2 = 1$	$6^2 = 36$	$11^2 = 121$
$2^2 = 4$	$7^2 = 49$	$12^2 = 144$
$3^2 = 9$	$8^2 = 64$	$13^2 = 169$
$4^2 = 16$	$9^2 = 81$	$14^2 = 196$
$5^2 = 25$	$10^2 = 100$	$15^2 = 225$

$20^2 = 400$
$25^2 = 625$

4) $\sqrt{\frac{3}{4}}$
= $\sqrt{\frac{7}{4}}$
= $\frac{\sqrt{7}}{2}$ (irr)

5) $\sqrt{0.25}$
= $\sqrt{\frac{1}{4}}$
= $\frac{1}{2}$ rat.

6) $\sqrt{0.9}$
= $\sqrt{\frac{9}{10}}$
= $\frac{3}{\sqrt{10}}$ (irr)

7) $\sqrt{0.0004}$

$= \sqrt{\dfrac{4}{10000}}$

$= \dfrac{2}{100}$

$= \dfrac{1}{50}$ rct.