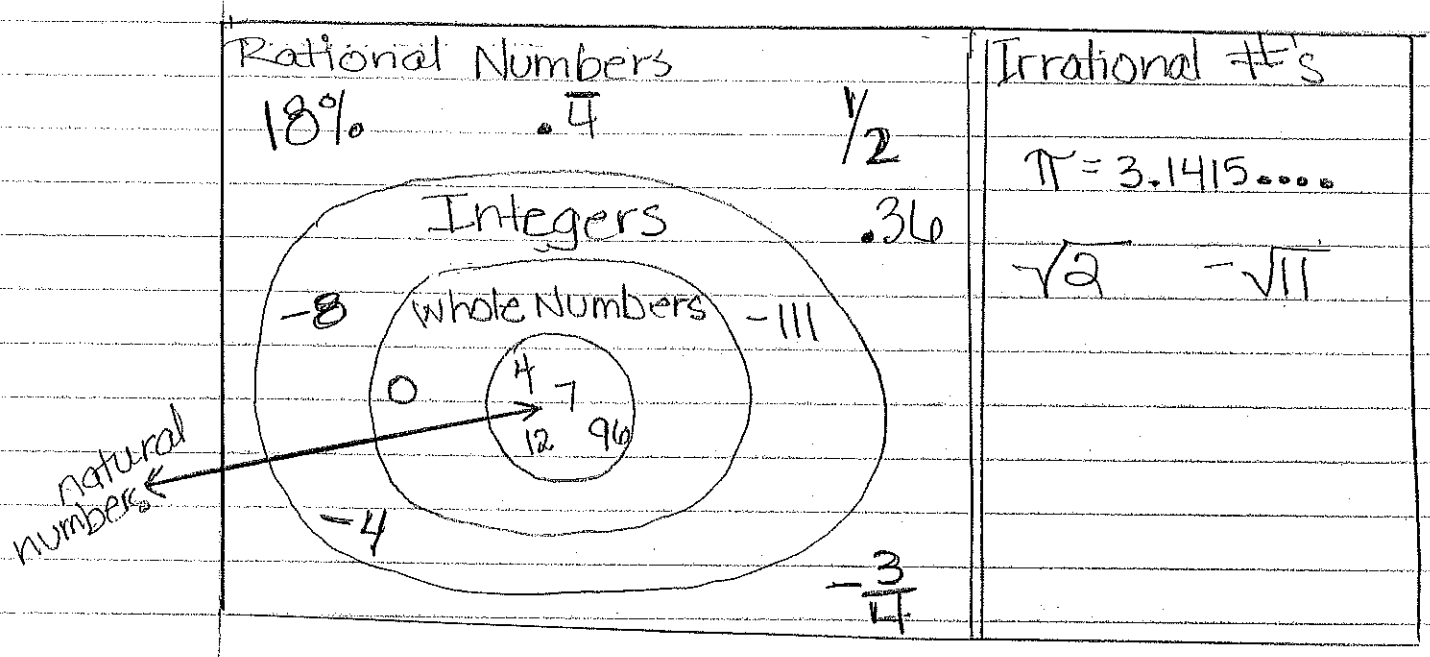
1.10 Comparing Real #'s



#'s that can be written as ratio (fraction).

$.\overline{25} = \frac{25}{99}$

$.\overline{3} = \frac{3}{9}$

$.3253253\overline{25} = \frac{325}{999}$

$.7171\overline{71} = \frac{71}{99}$

- cannot be written as a ratio or fraction
- and
- non-terminating
- doesn't repeat
- never ends
- never repeats

80

Comparing

$\sqrt{7}$ ◯ $2\frac{2}{3}$ (convert to decimals)

$2.645 < 2.\overline{6}$

$\sqrt{15}$ ◯ 387%

$3.872 > 3.870$

$\sqrt{30}, 6, 5\frac{4}{5}, 5.\overline{36}$

(put in order least to greatest)

convert to decimal

$\sqrt{30} = 5.477$ ②

$6 = 6.000$ ④

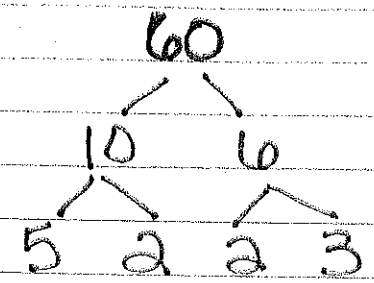
$5\frac{4}{5} = 5.800$ ③

$5.36 = 5.3666$ ①

$5.36, \sqrt{30}, 5\frac{4}{5}, 6$

additional notes

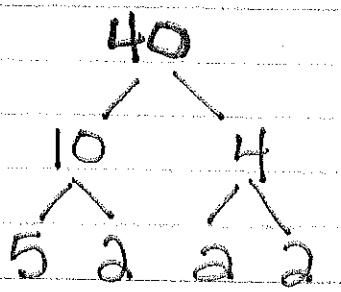
Prime Factorization



$2 \cdot 2 \cdot 3 \cdot 5$

$\downarrow$

$2^2 \cdot 3 \cdot 5$



$2 \cdot 2 \cdot 2 \cdot 5$

$\downarrow$

$2^3 \cdot 5$

Compare #s

$\sqrt{15} \bigcirc 3\frac{7}{8}$

$\downarrow$ $\qquad$ $\downarrow$

$3.8729 < 3.875$

1.8 extra

Square and Square Root Table

Square	Square Root	Square	Square Root
$1^2 = 1$	$\sqrt{1} = 1$	$16^2 = 256$	$\sqrt{256} = 16$
$2^2 = 4$	$\sqrt{4} = 2$	$17^2 = 289$	$\sqrt{289} = 17$
$3^2 = 9$	$\sqrt{9} = 3$	$18^2 = 324$	$\sqrt{324} = 18$
$4^2 = 16$	$\sqrt{16} = 4$	$19^2 = 361$	$\sqrt{361} = 19$
$5^2 = 25$	$\sqrt{25} = 5$	$20^2 = 400$	$\sqrt{400} = 20$
$6^2 = 36$	$\sqrt{36} = 6$	$21^2 = 441$	$\sqrt{441} = 21$
$7^2 = 49$	$\sqrt{49} = 7$	$22^2 = 484$	$\sqrt{484} = 22$
$8^2 = 64$	$\sqrt{64} = 8$	$23^2 = 529$	$\sqrt{529} = 23$
$9^2 = 81$	$\sqrt{81} = 9$	$24^2 = 576$	$\sqrt{576} = 24$
$10^2 = 100$	$\sqrt{100} = 10$	$25^2 = 625$	$\sqrt{625} = 25$
$11^2 = 121$	$\sqrt{121} = 11$	$26^2 = 676$	$\sqrt{676} = 26$
$12^2 = 144$	$\sqrt{144} = 12$	$27^2 = 729$	$\sqrt{729} = 27$
$13^2 = 169$	$\sqrt{169} = 13$	$28^2 = 784$	$\sqrt{784} = 28$
$14^2 = 196$	$\sqrt{196} = 14$	$29^2 = 841$	$\sqrt{841} = 29$
$15^2 = 225$	$\sqrt{225} = 15$	$30^2 = 900$	$\sqrt{900} = 30$