

$$\left[\frac{1}{4}n - n = -\frac{5}{6} \right] | \cdot 12$$

$$\begin{array}{r|l} -3n - 12n = -10 & \\ \hline -15n & = -10 \\ \hline -18 & | \cdot 15 \\ & n & = 15 \\ & & \text{mlr} \end{array}$$

$$12 \left[\frac{5}{4}a + \frac{1}{3} + \frac{4}{3} = \frac{25}{6} \right]$$

$$-15a + 4 + 16 = 50$$

$$-15a$$

$$-15a$$

$$\hline -15$$

a

$$= 50 - 4 - 16$$

$$= 30$$

$$\hline -15$$

$$= -2$$

Real

$2\sqrt{5}$

Rational

$5, 17, 10, \sqrt{81}$
 $\frac{1}{4}, 3.14, \frac{1}{2}, \sqrt{4}$
 $6.\overline{7}, 3.5, \sqrt{9}$
 $-2, \frac{2}{3}, -15, -7$
 $\sqrt[3]{125}, 125^3$

Irrational

$\pi, \sqrt{7}, \sqrt{122},$
 $\sqrt{65}, \sqrt{3}, 5.3\dots$
 $\sqrt{5}, \frac{3.5\dots}{\sqrt{68}}, 7.5\dots$
 $\sqrt{2}, \sqrt{15}, \sqrt{63}, \sqrt{10}$
 $9.2\dots, \sqrt{102}, \sqrt[3]{7}$
 $\sqrt{26}$

$$P\left(\frac{1}{4}n - n = -\frac{5}{2}\right)$$

$$-3n - 12n = -10$$

$$\frac{-15n}{-15} = \frac{-10}{-15}$$

$$n$$

$$\frac{2}{3}$$

$$\sqrt{2} \left(\frac{5}{4}a + \frac{1}{3} + \frac{4}{3} = \frac{25}{6} \right)$$

$$\begin{array}{r}
 -15a + 4 + 16 = 50 \\
 \hline
 -15a \\
 -15a \\
 \hline
 -15 \quad a \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 50 \\
 \hline
 50 - 16 - 4 \\
 \hline
 30 \\
 \hline
 15 \\
 \hline
 2
 \end{array}$$

$$10 \left[\frac{9}{5}x + \frac{3}{2}x = \frac{-33}{10} \right]$$

$$18x + 15x = -33$$

$$\frac{\cancel{33}x}{33} = \frac{-33}{\cancel{33}}$$

$$\frac{10 \cdot 9}{5} = \frac{90}{5} = 18$$

$$x = -1$$

$.4\bar{3}$	Real	$\frac{1}{\sqrt{7}}$	$\frac{\sqrt{16}}{\sqrt{50}}$
0.14141414			
<u>Rational</u>	$0.\bar{3}$	<u>Irrational</u>	
$\sqrt{49}, \sqrt{9}, 2, 5$	$\frac{1}{3}$	$\sqrt{2}, 6.3\dots$	$\sqrt{24}, \sqrt{99}$
$-6, .4\bar{1}, -7.3$	$\sqrt{5}, \sqrt{15}$	$\sqrt{3}, \sqrt{17}$	$\sqrt{3}, \sqrt{97}$
$-30, 3\frac{1}{2}$	$\frac{5}{\sqrt{4}}$	$\sqrt{13}, \sqrt{17}$	$\sqrt{6}, \sqrt{8}$
$\sqrt{14}, .4\bar{3}$	$\frac{2\sqrt{5}}{10}, \sqrt{14}$	$\sqrt{42}, \sqrt{65}$	$\sqrt{21}, \sqrt{21}$
		$5.5\dots, 7.4\dots$	$3.2\dots$

$$\sqrt{1} = 1$$

$$\sqrt{4} = 2$$

$$\sqrt{9} = 3$$

$$\sqrt{16} = 4$$

$$\sqrt{25} = 5$$

$$\sqrt{36} = 6$$

$$\sqrt{49} = 7$$

$$\sqrt{64} = 8$$

$$\sqrt{81} = 9$$

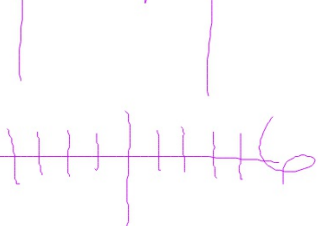
$$\sqrt{100} = 10$$

$$\sqrt{121} = 11$$

$$\sqrt{28}$$

$$\textcircled{3} \sqrt{\textcircled{8}}$$

$$\sqrt{25} \quad \sqrt{36}$$



$$\frac{3}{11}$$

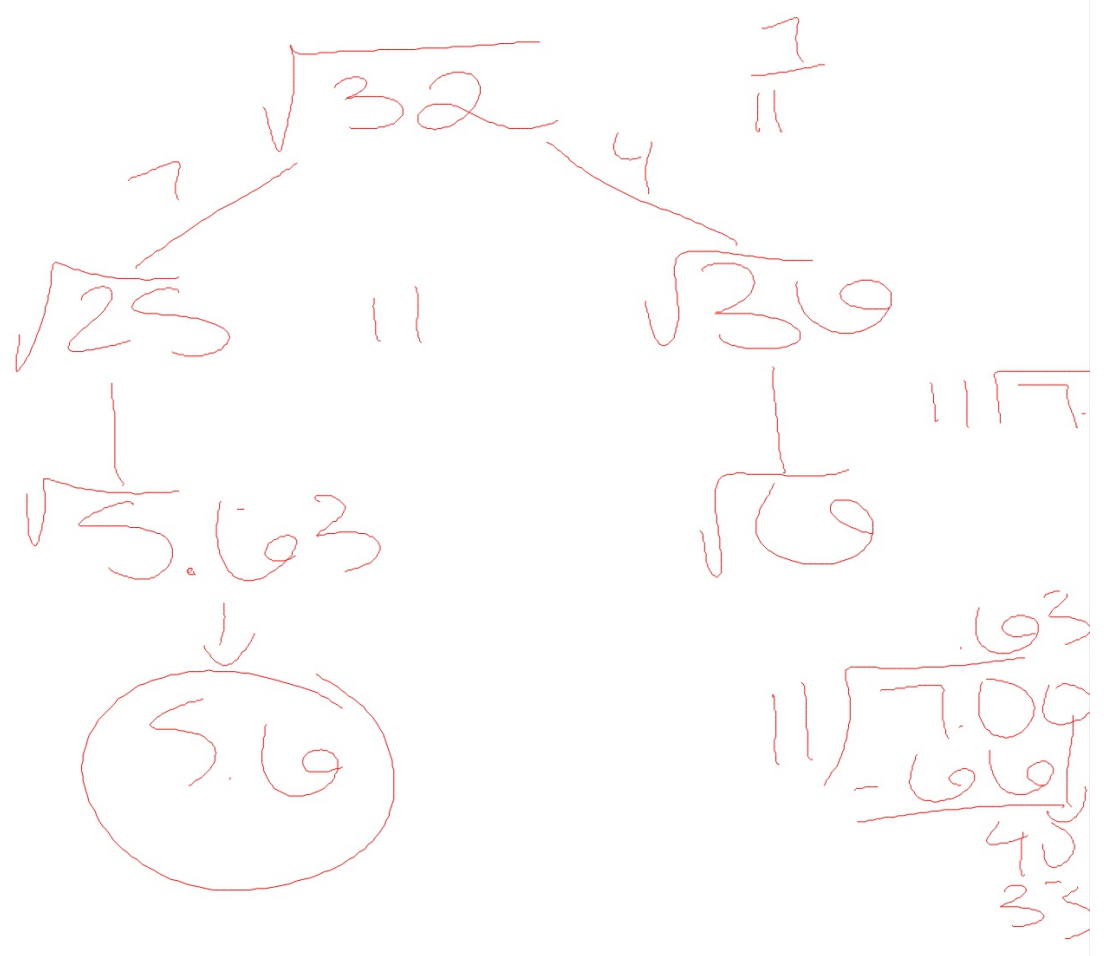
$$\begin{array}{r} .27 \\ 11 \overline{) 3.00} \\ \underline{-22} \\ 80 \end{array}$$

$$\sqrt{58}$$

$$5.27$$

$$\textcircled{5.3}$$

- $\sqrt{1}$
- $\sqrt{4}$
- $\sqrt{9}$
- $\sqrt{16}$
- $\sqrt{25}$
- $\sqrt{36}$
- $\sqrt{49}$



$$12 \left[-\frac{1}{4}n - n = -\frac{5}{2} \right]$$

$$\begin{array}{r} -3n - 12n = -10 \\ \hline -15n = -10 \\ \hline -15 \quad | \quad -15 \\ \hline n = \frac{2}{3} \end{array}$$

$$12\left(-\frac{5}{4}a + \frac{1}{3} + \frac{4}{3} = \frac{25}{6}\right)$$

$$\begin{array}{l} = 15a + 4 + 16 = 50 \\ \hline -15a \qquad = 50 - 4 - 16 \\ \hline -15a \qquad = 30 \\ \hline -18a \qquad = -2 \end{array}$$

Real

~~$\frac{3\sqrt{5}}{10}$~~ $\frac{3\sqrt{5}}{10}$

Rational

- $7, \frac{5}{6}, 2.5, 5, \sqrt{25}$
- $2\frac{1}{6}, 7\frac{4}{5}, 700.9, \sqrt{100}$
- $-6, \frac{5}{12}, -8, 6.9, \sqrt{69}$
- $\sqrt[3]{8}, 2^2, 4^3, \sqrt[3]{216}$

Irrational

- $3.5\dots$
- $4.2\dots$
- $4.9\dots$
- $\sqrt{5}$
- $\sqrt{5}$
- $\sqrt{20}$
- $\frac{1}{\sqrt{5}}$
- $3\sqrt{11}$

$$\begin{aligned} \sqrt{1} &= 1 \\ \sqrt{4} &= 2 \\ \sqrt{9} &= 3 \\ \sqrt{16} &= 4 \\ \sqrt{25} &= 5 \\ \sqrt{36} & \\ \sqrt{49} & \\ \sqrt{64} & \\ \sqrt{81} & \\ \sqrt{100} & \end{aligned}$$

$$\begin{array}{l} \sqrt{43} \\ \textcircled{7} \quad \textcircled{6} \\ \sqrt{36} \quad \sqrt{49} \\ | \quad | \\ 6 \quad 7 \\ \hline 6.54 \\ \textcircled{6.5} \end{array}$$

$$\frac{7}{13}$$

$$\begin{array}{r} 54 \\ 13 \overline{) 7.00} \\ \underline{65} \\ 50 \end{array}$$

$$\begin{aligned} 1^2 &= 1 \\ 2^2 &= 4 \\ 36 & \quad 43 \end{aligned}$$

$$\textcircled{1} \sqrt{58}$$

$$\textcircled{2} \frac{9}{5}x + \frac{3}{2}x = -\frac{33}{10}$$

$$\sqrt{62}$$

$\textcircled{13} \wedge \textcircled{2}$

$$\sqrt{49} \quad \sqrt{64}$$

7 — 8

$$\frac{13}{15} = 15 \overline{) 13.00}$$
$$\begin{array}{r} 0.86 \\ 15 \overline{) 13.00} \\ \underline{-120} \\ 10 \end{array}$$

$$\frac{64}{49}$$

$\textcircled{15}$

$$7.86$$

$$\textcircled{7.9}$$

$$\textcircled{2} \quad \left[\frac{1}{4}n - n + \frac{5}{4} \right]$$

$$-3n - 12n = -10$$

$$-15n = -10$$

$$n = \frac{-10}{-15}$$

$$\frac{-15n = -10}{-15 \quad -15}$$

$$n = \frac{2}{3}$$

$$n = \frac{-10}{-15} \div \frac{5}{5} = \frac{2}{3}$$

$$n = \frac{2}{3}$$

22

$$-\frac{5}{4}a + \frac{1}{3} + \frac{4}{3} = \frac{25}{6}$$

$$\left(\frac{\cancel{12}^3}{1} \times \frac{5}{\cancel{12}^4} a\right) + \left(\frac{\cancel{12}^4}{1} \times \frac{1}{\cancel{12}^3}\right) + \left(\frac{\cancel{12}^4}{1} \times \frac{4}{\cancel{12}^3}\right)$$

$$= \left(\frac{\cancel{12}^2}{1} \times \frac{25}{\cancel{12}^4}\right) = -15a + 4 + 16 = 50$$

$$-15a + 20 = 50$$

$$\begin{array}{r|l} -20 & -20 \end{array}$$

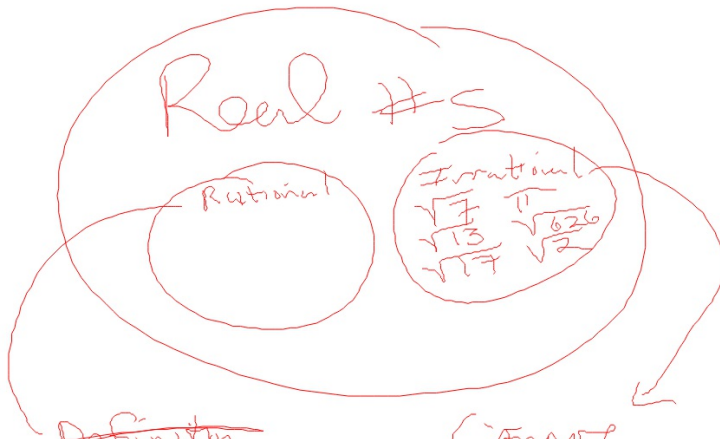
$$-15a = 30$$

$$\begin{array}{r|l} \frac{-4}{-15} & \frac{30}{-15} \end{array}$$

$$a = -2$$

Roots

- 4
- 9
- 16
- 25
- 36
- 49
- 64
- 81
- 100
- 121
- 144
- 169
- 196
- 225



~~Definition~~
 CAN BE
 written as
 a ratio OR
 FRACTION

CANNOT
 Be written
 as a fraction
 Non terminating
 Non Repeating

Non Perfect Squares are \rightarrow IRRATIONAL

Other Irrational #'s

- $\sqrt{51}$
- $\sqrt{3}$
- $\sqrt{10}$
- 2.29...
- 3.41...
- 1.3...

$$\frac{2}{\sqrt{7}}$$

$$3\sqrt{7}$$

$$1^2 = 1$$

$$2^2 = 4$$

$$3^2 = 9$$

$$4^2 = 16$$

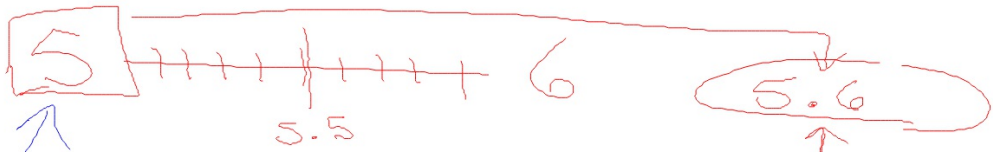
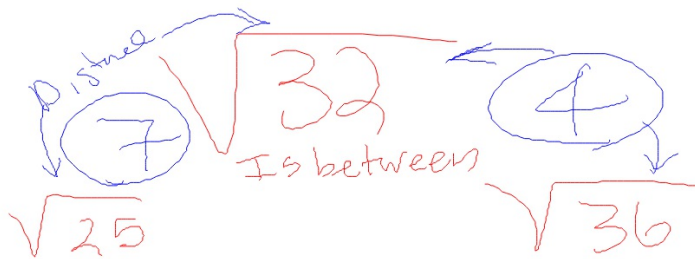
$$\sqrt{1} = 1$$

$$\sqrt{4} = 2$$

$$\sqrt{9} = 3$$

$$\sqrt{16} = 4$$

- $\sqrt{11}$
- $\sqrt{4}$
- $\sqrt{9}$
- $\sqrt{16}$
- $\sqrt{25}$
- $\sqrt{36}$
- $\sqrt{49}$
- $\sqrt{64}$
- $\sqrt{81}$
- $\sqrt{100}$



Will be in the final answer...

Distance between the first two square roots $\frac{7}{11}$

Distance between the perfect squares

