Surds

① $\sqrt{72}$ = $6\sqrt{2}$

↳ put into calculator

2	7 2
2	3 6
2	1 8
3	9
	3
	1

$\sqrt{2 \times 2 \times 2 \times 3 \times 3}$ → pairs made taken
↳ $2 \times 3 \sqrt{2}$ out and written only
↳ $6\sqrt{2}$ once

② $\sqrt{24}$ → $\sqrt{2 \times 2 \times 2 \times 3}$ → $2\sqrt{2 \times 3}$ → $2\sqrt{6}$

③ $\sqrt{125}$ → $\sqrt{5 \times 5 \times 5}$ → $5\sqrt{5}$

④ $\sqrt{96}$ → $\sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 3}$ → $4\sqrt{6}$

⑤ $\sqrt{192}$ → $\sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3}$ → $6\sqrt{3}$

Rational & Irrational Numbers

Rational Number: Numbers that can be written as a fraction of two integers

1. Whole numbers → $5, 7$ → $5/1 , 7/1$
2. Terminating decimals → 0.25 → $\dfrac{25}{100}$
   ↳ decimals which end

   $$0.75 → \dfrac{175}{100}$$

3. Recurring decimals → $0.\overset{..}{3}\overset{..}{3} = \dfrac{1}{3}$

   $$0.66 = \dfrac{2}{3}$$

Irrational Numbers: Numbers that cannot be written as a fraction of two integer

eg.-
$\sqrt{2}$
π
$\sqrt{3}$ and so on

Write an irrational number b/w 2 and 3

$\sqrt{5} , \sqrt{6} , \sqrt{7} , \sqrt{8}$

and soon