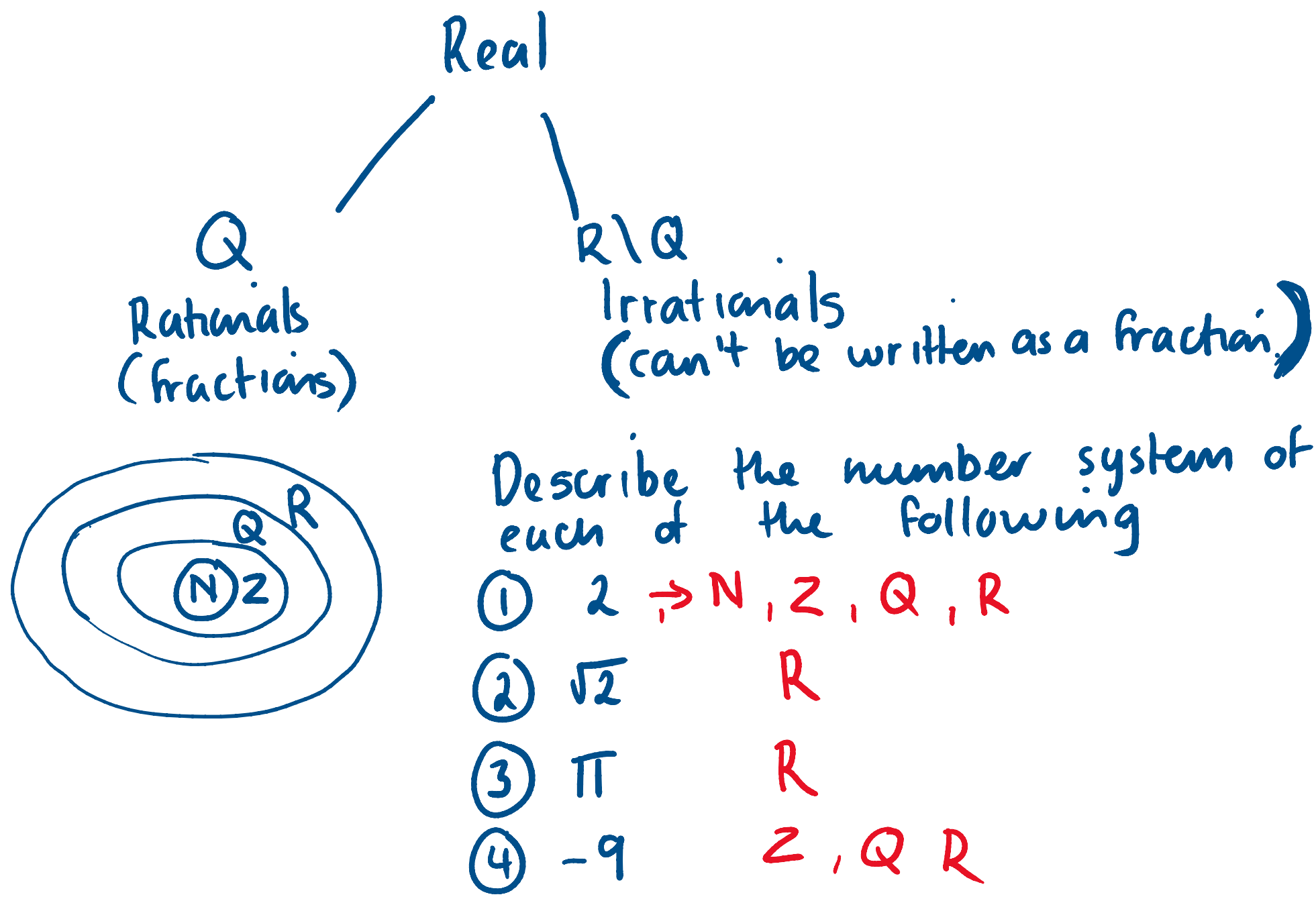


① Number Systems.

$N \rightarrow$ Natural $\{1, 2, 3, 4, 5, \dots\}$ positive whole numbers

$Z \rightarrow$ Integers $\{-3, -2, -1, 0, 1, 2\}$

$R \rightarrow$ Real All numbers - decimal, surds.



② Indices

- Multiplication - add powers
- Division - subtract bottom power from top power
- A power to a power - multiply powers
- Power of 0 = 1
- Negative powers = make reciprocal

HW ① $\frac{3^4 \times 3^2}{3^5}$

$$\frac{3^{4+2}}{3^5} = \frac{3^6}{3^5} \quad 3^{6-5} = 3^1 = 3$$

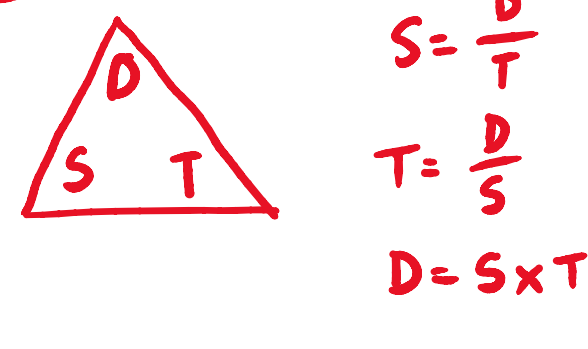
② Express in the form 2^n

① 8 ② $\frac{\sqrt{8}}{2}$ $\sqrt{5} = 1/2$

① $8 = 2^3$
 $2 \times 2 \times 2$
 2^3

② $\frac{\sqrt{8}}{2} = \frac{2\sqrt{2}}{2} = \sqrt{2} = 2^{1/2}$
 $2^{3 \times 1/2} = 2^{3/2}$
 $\frac{2^{3/2}}{2^1} = 2^{3/2 - 1} = 2^{1/2}$
 $2^{1.5 - 1} = 2^{0.5} = 2^{1/2}$

③ Arithmetic



(eg 1) A motorist travelled 300km in 6 hours. Her average speed for the first two hours was 100km/hr. Find her average speed in km/hr for the last four hours.

First two hours
 $D = 100 \text{ km/hr} \times 2 = 200 \text{ km}$
 $300 - 200 = 100 \text{ km (D)}$
 4 hours (T)
 $S = \frac{D}{T} = \frac{100}{4} = 25 \text{ km/hr}$

Ratio

A sum of money is divided in to the ratio 1:3:5. If the smallest part is €250, find the sum of money.

$\frac{1}{9} = €250$
 $\frac{9}{9} = 250 \times 9 = €2250$

HW w/o pg 287/288

HW) 8% of a sum of money is €24.40 Find the sum of money