Compound measures: fact sheet

Planner week 22 · Learn these facts

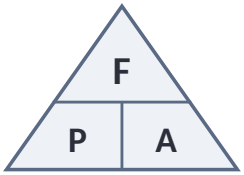
What they are

one unit per another

km/h g/cm³ N/m²

Two measures combined

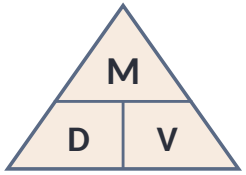
Pressure



Pressure = force ÷ area

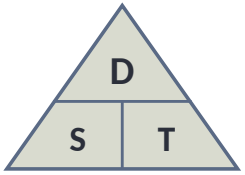
Formula is given

Density



Density = mass ÷ volume

Speed



Speed = distance ÷ time

Rates of flow

11.9 m³ every second

time = amount ÷ rate

Litres per minute, m³ per second

Changing units

180 km/h

= 180 000 m per 3600 s

= 50 m/s

Change the top, then the bottom

Area first

cube: area = side²

prism: area = V ÷ h

Pressure uses the area

touching the floor

Units

Pressure	N/m² or N/cm²
Density	g/cm³
Speed	km/h, m/s
Flow	litres/min

Key words

- **Compound measure** made from two other measures
- **Pressure** force on each unit of area
- **Rate** how much each second, minute or hour
- **Newton (N)** the unit of force

Exam tips

- Write the formula triangle first.
- The units tell you the formula: N/cm² = N ÷ cm².
- Make the units match before you start.
- Area for pressure: the face touching the ground.
- Changing time: 1 hour = 3600 seconds.
- Show percentages of change with numbers.

Compound measures: fact sheet

Compound measures · Planner week 22 · Learn the method

Worked example

QUESTION

A force of 120 newtons acts on an area of 4 m².

Work out the pressure. (Pressure = force ÷ area)

ANSWER

1. Pressure = force ÷ area

2. = 120 ÷ 4

30 N/m²

Pressure = force ÷ area.

How to do it

1. Write the formula given (or the triangle).
2. Find any missing measure first (area, volume, time).
3. Make the units match.
4. Multiply or divide using the triangle.
5. Write the units in your answer.

Model answer:

120 ÷ 4 = 30 N/m²

Watch out

- Using the volume instead of the area.
- Mixing minutes and seconds.
- Dividing the wrong way round.