

CLASS 8

MATHS

REVISION NOTES

Revision Notes: Class 8 Maths Chapter 7 Proportional Reasoning-1

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Class 8 Maths Chapter 7: Proportional Reasoning-1 — Quick Revision Notes

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Ratio: a comparison of two quantities of the same kind, written $a:b$ or a/b ; both terms must be in the same unit before comparing.

Proportion: a statement that two ratios are equal, $a:b::c:d$; true if and only if the cross products are equal, $a \times d = b \times c$.

Simplest form: divide both terms of a ratio by their HCF.

Similar figures: figures whose corresponding measurements are all in the same ratio — recognisable even when rotated, since the ratio itself (not orientation) is what matters.

Rule of Three / Unitary method: find the value for a single unit first, then scale up (or down) to the quantity needed — the standard tool for solving proportional word problems.

Direct proportion: as one quantity increases, the other increases at the same rate, so their ratio stays constant (e.g. bricks needed for a wall length).

Inverse proportion: as one quantity increases, the other decreases so their product stays constant (e.g. speed $\times$ time = a fixed distance).

Sharing in a given ratio: split the total into (sum of the ratio's parts) equal shares, then give each person their number of parts.

Comparing crowding/density: convert both groups to a common basis (e.g. people per sq km) before comparing, rather than comparing raw totals.

Alternendo property: if $a:b = c:d$, then $a:c = b:d$ also holds true.