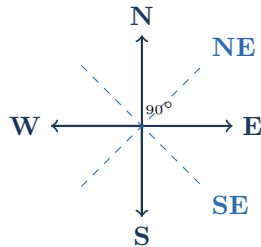


Direction Sense Test – Master Cheat Sheet

Comprehensive Guide for Competitive Exams (Reasoning Section)

1. Fundamental Directions

There are **4 main directions**: North (N), South (S), East (E), and West (W). There are **4 cardinal directions**: North-East (NE), North-West (NW), South-East (SE), and South-West (SW).



* **Angle between adjacent main directions:** 90° * **Angle between main and cardinal directions:** 45°

2. Left Right Movement Rules

When facing a particular direction, turns are evaluated as follows: * **North:** Left is West, Right is East. * **South:** Left is East, Right is West. * **East:** Left is North, Right is South. * **West:** Left is South, Right is North.

Rule of Thumb: A right turn is a 90° clockwise rotation. A left turn is a 90° counter-clockwise rotation.

3. Pythagoras Theorem

To find the **shortest distance** (displacement) between the starting and ending points, use the right-angled triangle formula:

$$\text{Hypotenuse}^2 = \text{Base}^2 + \text{Perpendicular}^2$$

$$\text{Distance} = \sqrt{B^2 + P^2}$$

Common Pythagorean triplets to memorize: * $(3, 4, 5)$ * $(5, 12, 13)$ * $(8, 15, 17)$ * $(7, 24, 25)$

4. Shadow Sun Concepts

During sunrise or sunset, shadows play a vital role in direction puzzles: * **Sunrise (Morning):** The sun is in the **East**. Shadows fall towards the **West**. * **Sunset (Evening):** The sun is in the **West**. Shadows fall towards the **East**.

* **Key Trick:** If A's shadow falls to the right of B in the morning, B is facing **South** (since East is to B's right, making the shadow on the left/right respective to alignment).

5. Advanced Shortcuts

* **Left-Right Cancellation:** If a person takes a left turn and then a right turn consecutively, their net direction remains unchanged ($L + R = 0$). * **Opposite Turns:** Four consecutive left or right turns bring you back to your original starting direction and facing point.