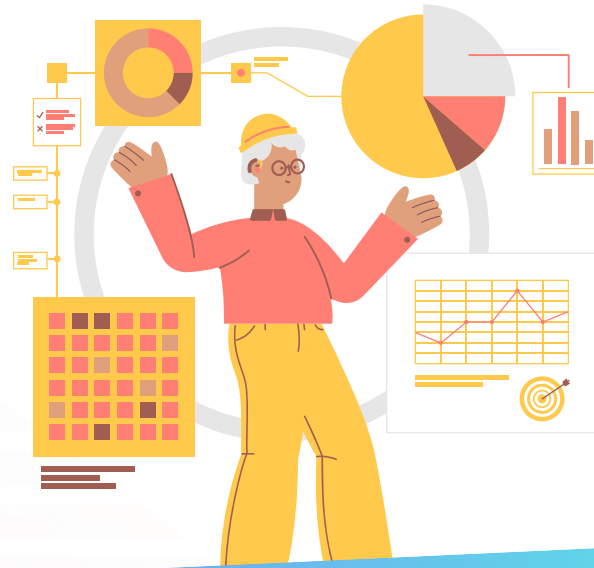
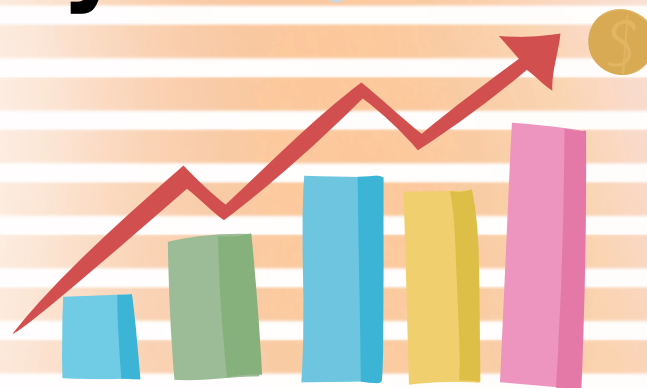


Learn Statistics



Are you confused between PMF and PDF?

I was too. So I revised it
—and here's a simple
version just for you. 💡



Aliya Jabbar



What is PMF?

PMF = Probability Mass Function
Used for: Discrete values (like 0, 1, 2...)

It gives the exact probability of an outcome.

Example



Aliya Jabbar



Example

Tossing a fair die
Each number (1 to 6) has the
same chance:
 $1/6$

Number 🎲	PMF $P(X = x)$
1	$1/6$
2	$1/6$
...	...
6	$1/6$



What is PDF?

PDF = Probability Density Function
Used for: Continuous values (like time, height)

Probability at **an exact point is 0** — we take a range.

Example



Aliya jabbar



PDF Example

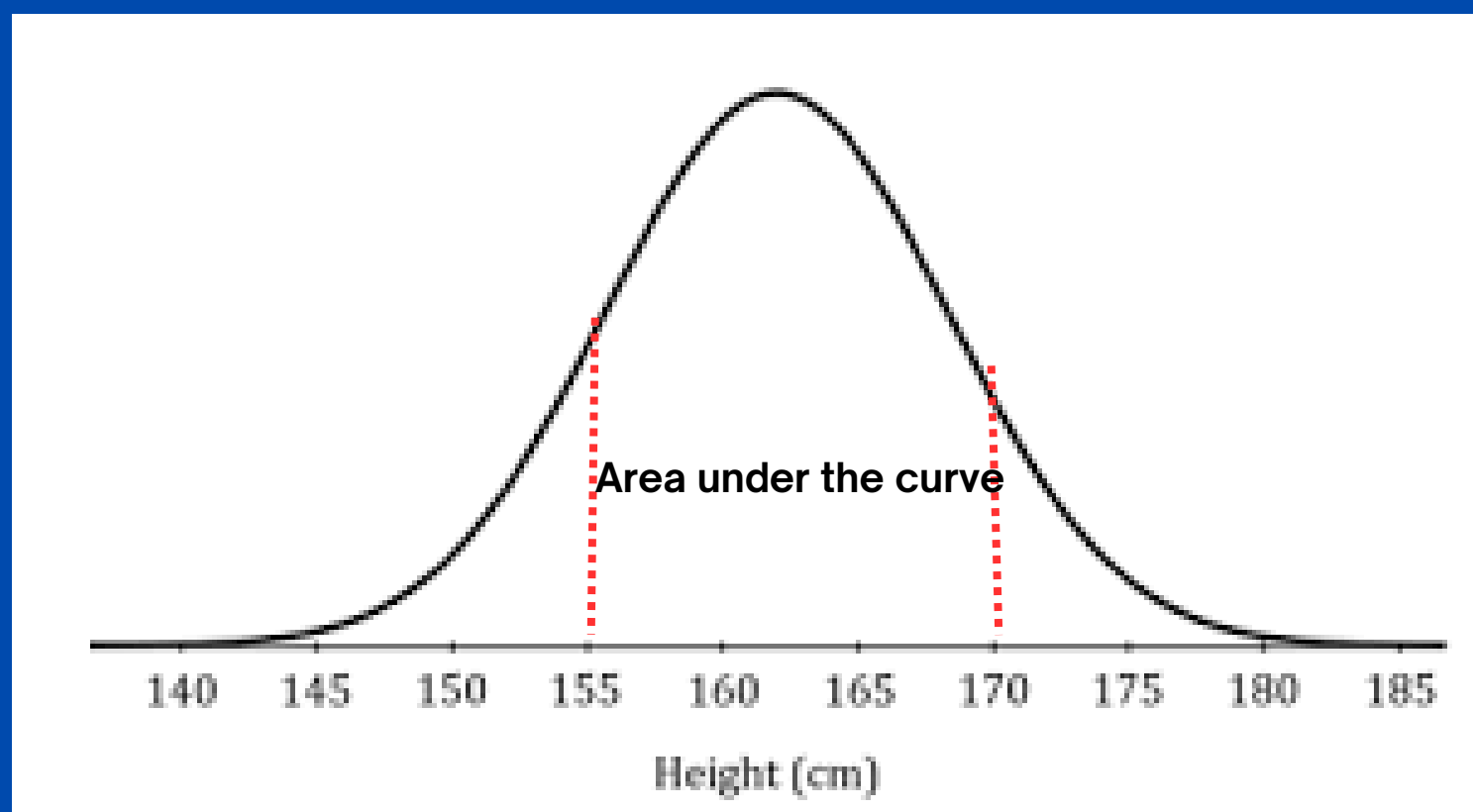
You can't say:

Probability of 155 cm = ?

But you can say:

Probability of height between
155–170 cm

= Area under the curve



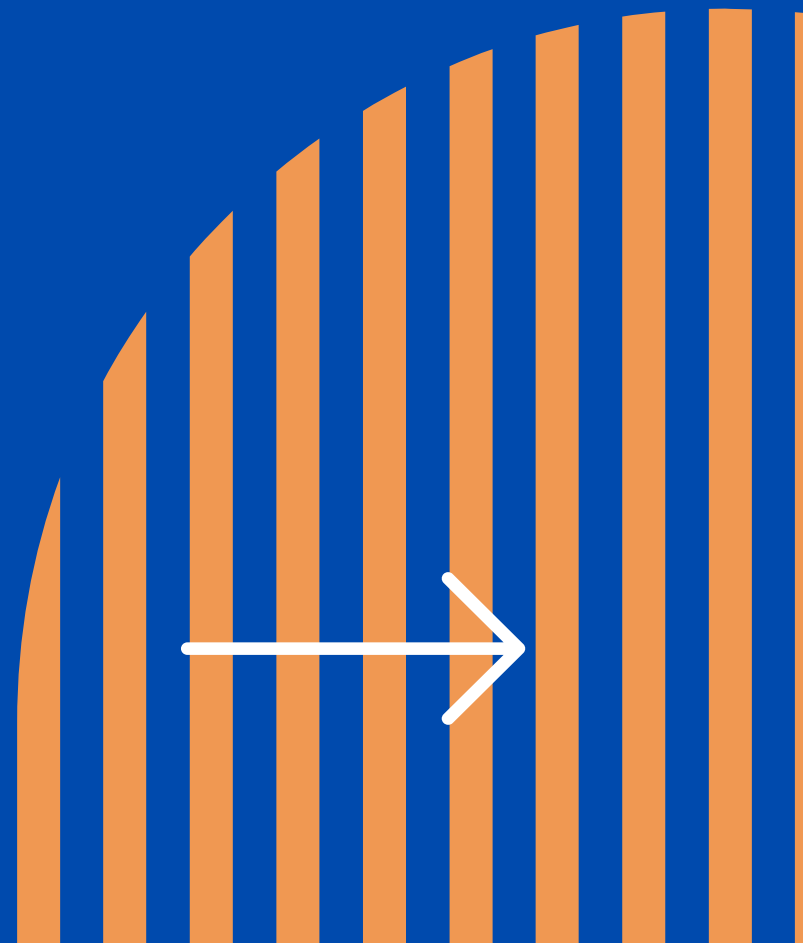
Quick Tip to Remember

PMF = Point (discrete)

PDF = Density (continuous)

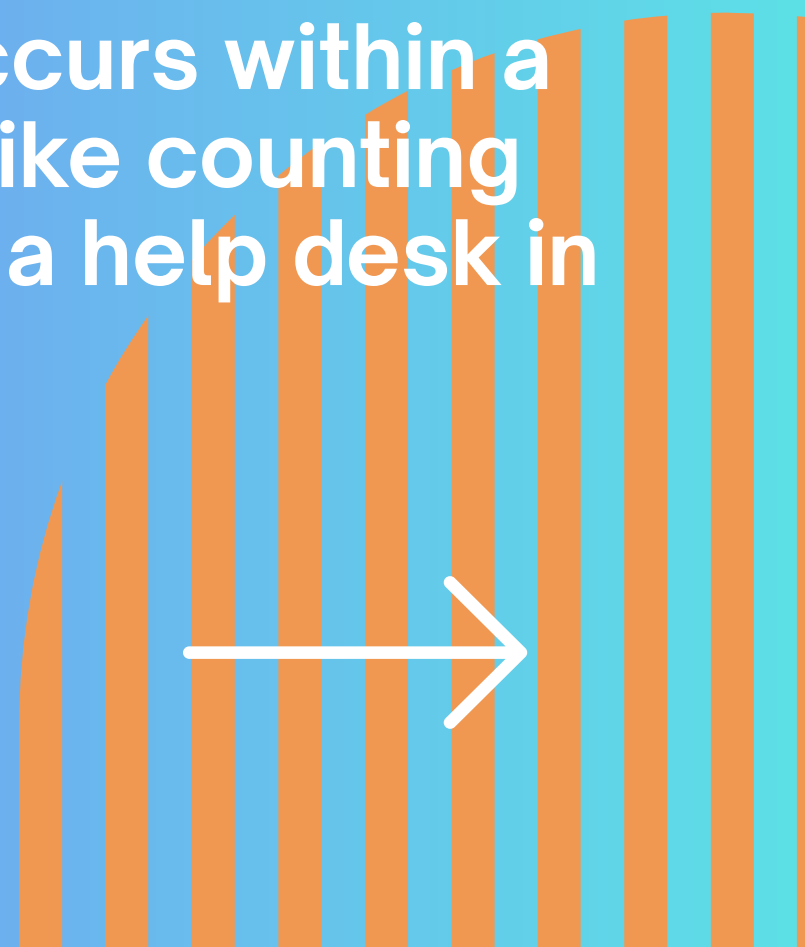
 **PMF → exact values**

 **PDF → area under curve**



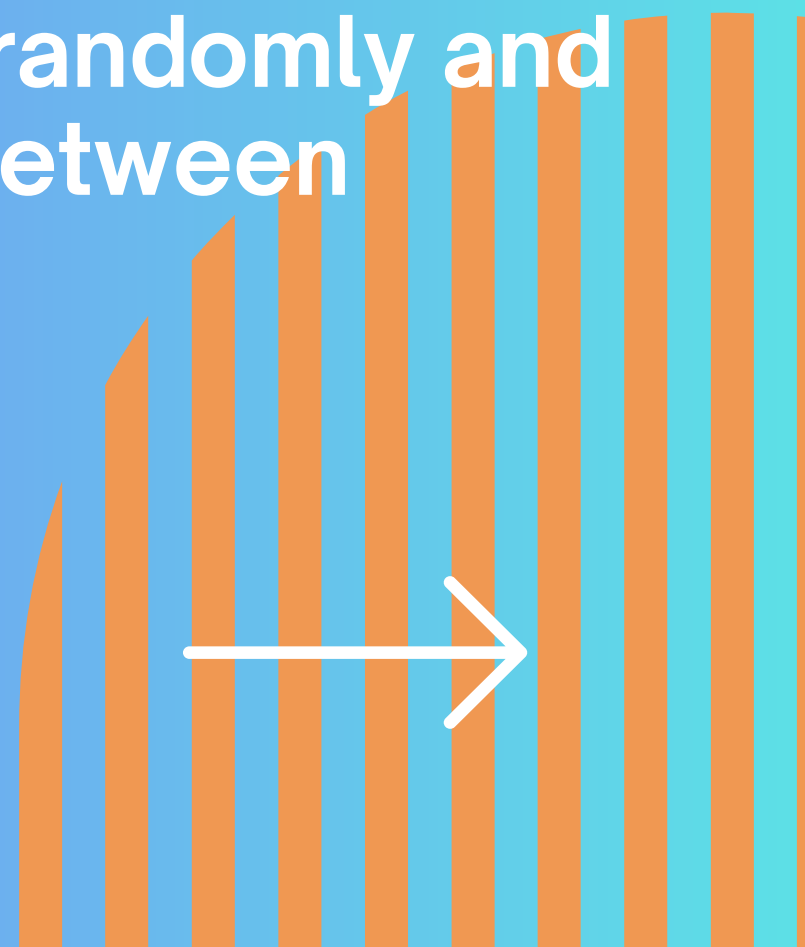
Types of PMF Distributions

- **Bernoulli Distribution:** This represents a single experiment or trial that has only two possible outcomes—success (1) or failure (0), like flipping a coin once.
- **Binomial Distribution:** This models the number of successes in a fixed number of independent Bernoulli trials, such as flipping a coin 10 times and counting how many head you get.
- **Poisson Distribution:** This describes the number of times a rare event occurs within a fixed interval of time or space, like counting how many phone calls come to a help desk in one hour.



Types of PDF Distributions

- **Uniform Distribution:** Every value within a certain range has an equal chance of occurring, like randomly picking a number between 1 and 10.
- **Normal Distribution:** Data is symmetrically distributed in a bell-shaped curve, with most values clustering around the average (mean), like human heights.
- **Exponential Distribution:** It models the time between events that happen randomly and independently, like the time between arrivals of buses at a stop.



Summary

Term	Use For	Example	Key Idea
PMF	Discrete	Die roll	Exact value prob
PDF	Continuous	Height	Range probability



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“Made Easy” notes!**

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