SECURITY ANALYSIS

SECURITY ANALYSIS

"investment"

"selection of securities" ⟹ BUY?

First step in Portfolio Management

Approaches to Security Analysis

FUNDAMENTAL ANALYSIS

Assumption :-

TECHNICAL ANALYSIS

Assumptions :-

(1) Share Price → depends on

Share Price → depends on future dividends expected by Investor

↓

"Dividend Discount Model"

DDM

↓

Myron J. Gordon

↓

Gordon Model

demand & supply of the share

↓

(ii) share Price moves in trend.

(or)

share Price follows a pattern

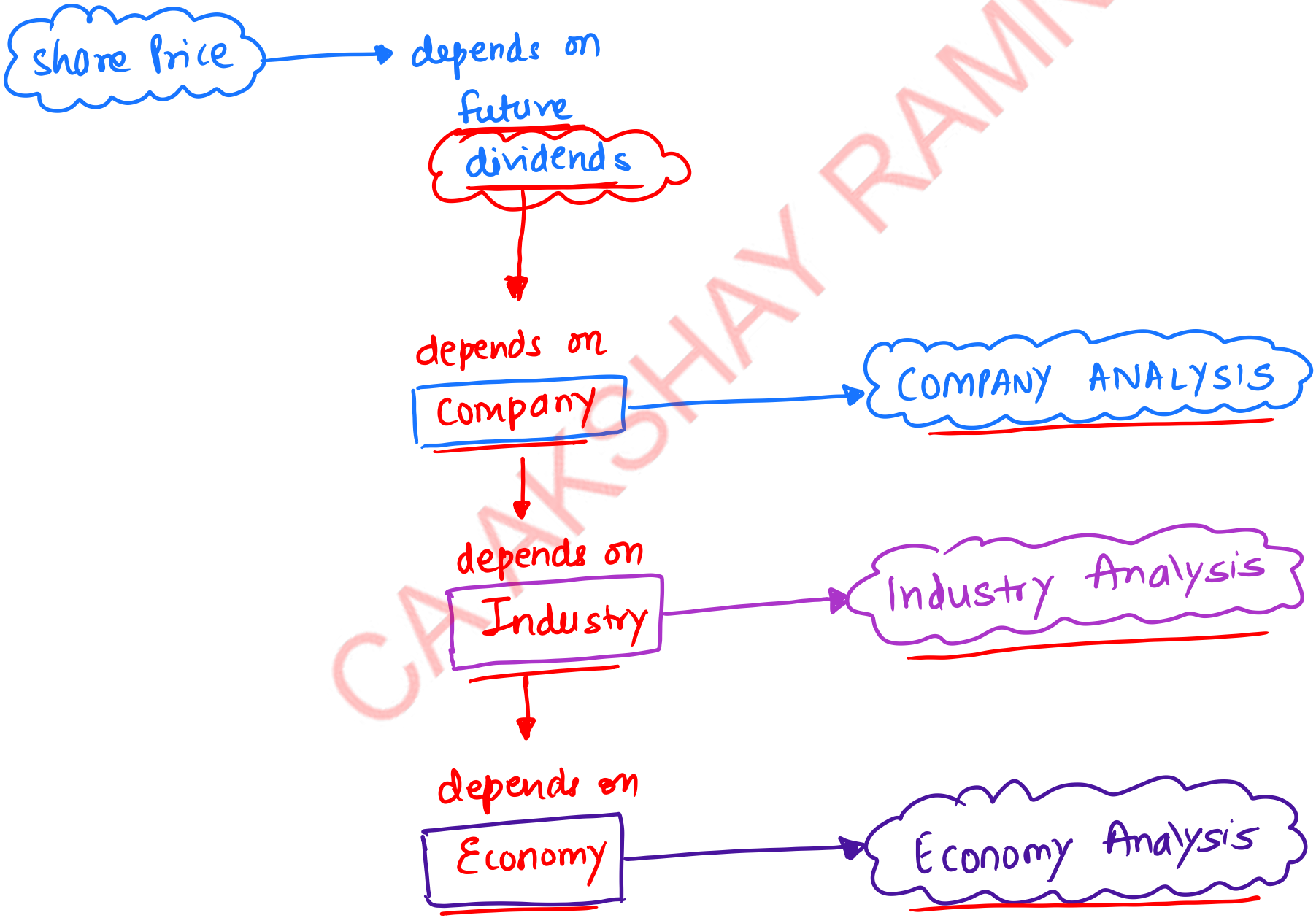
⇓

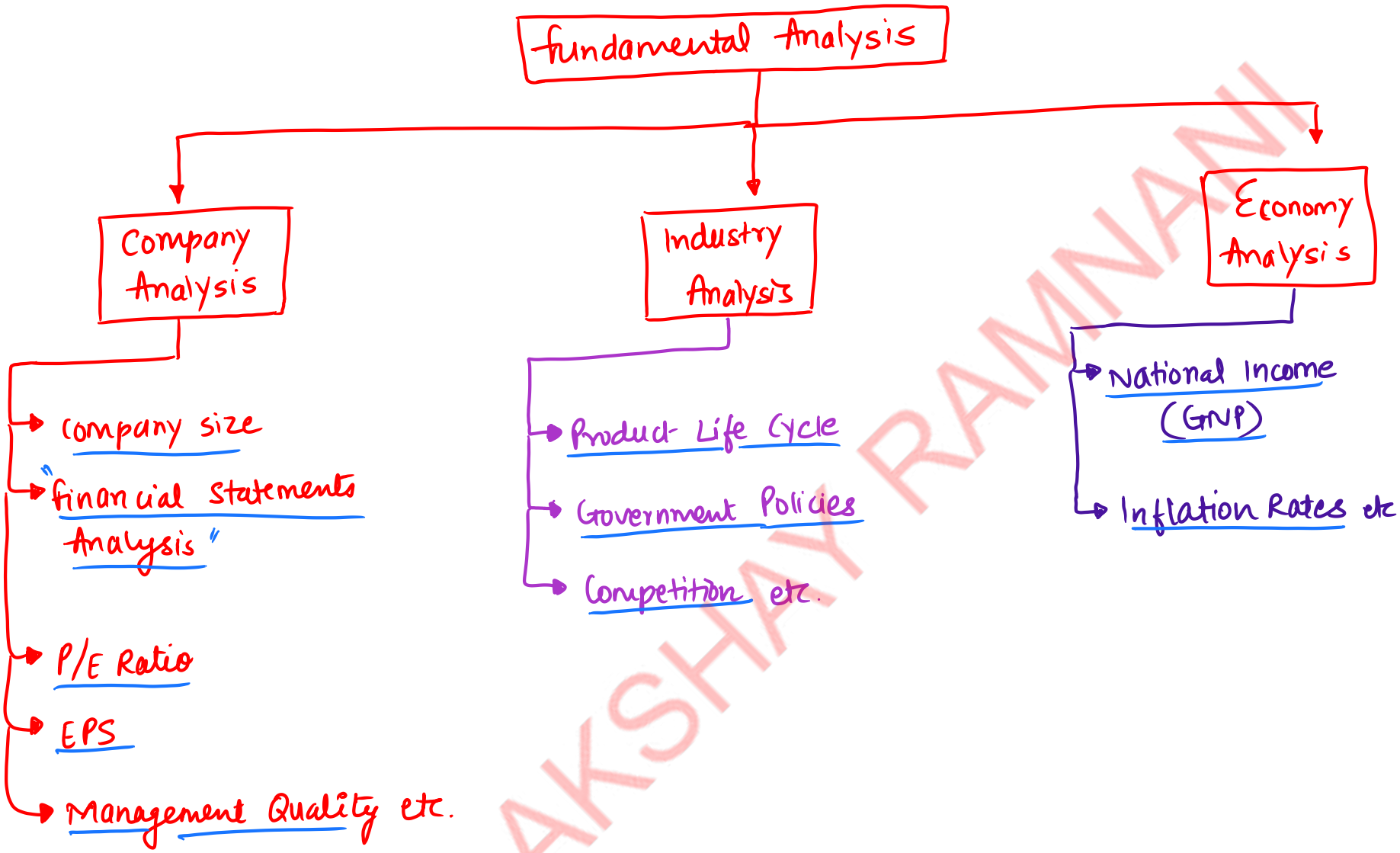
UP trend → BULLISH trend

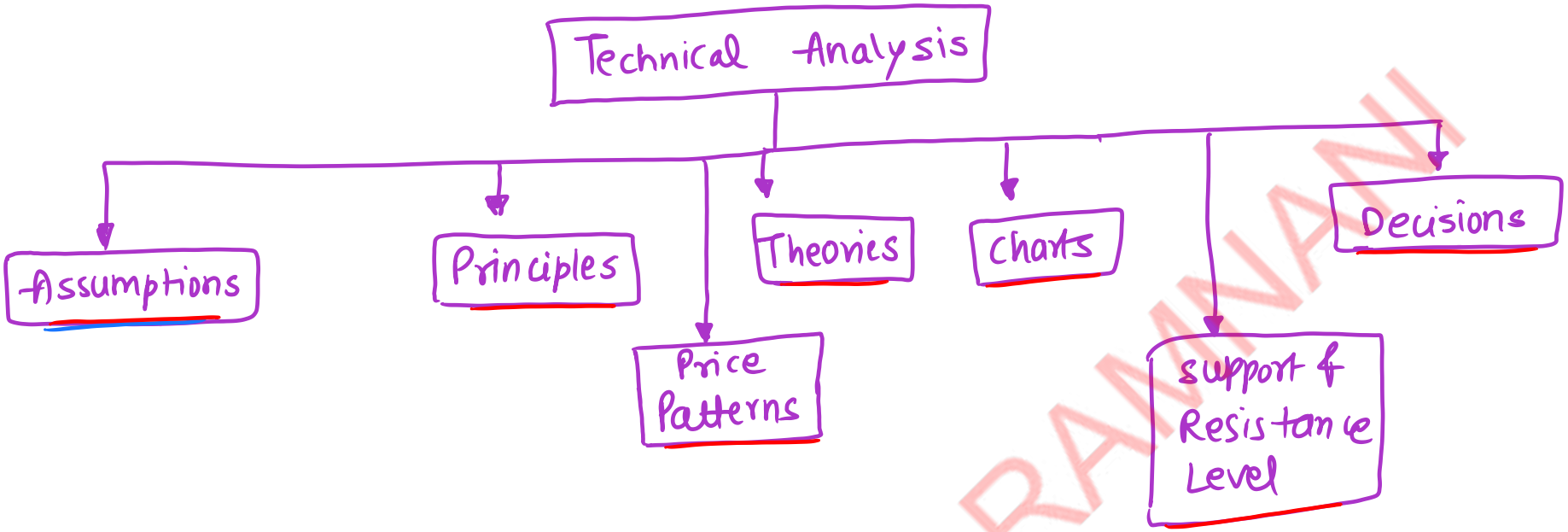
DOWN trend → BEARISH trend

NO trend

FUNDAMENTAL ANALYSIS







Assumptions

- demand & supply
- Trend / Pattern

- D↑ S= ⇒ Price↑ = BUY
- D↓ S= ⇒ Price↓ = SELL

Principles

- market price discounts everything
- Price moves in trends
- History repeats itself

Theories

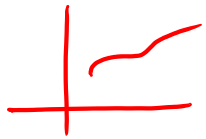
- The Dow Theory
- Elliot Wave Theory
- Random Walk Theory

Charts

- Bar chart
- Line chart
- Point & figure chart

support level

- Lowest value → Buying Pressure to bounce back



Resistance Level

Highest value → selling pressure to become weak

Price Patterns

- Channel
- Wedge
- Head & Shoulders
- Triangle / Coil formation
- Flags & Pennants form
- Double Top
- Double Bottom
- Gap

Decisions

→ BUY and SELL decisions

BUY → When to BUY ? → BUY SIGNAL

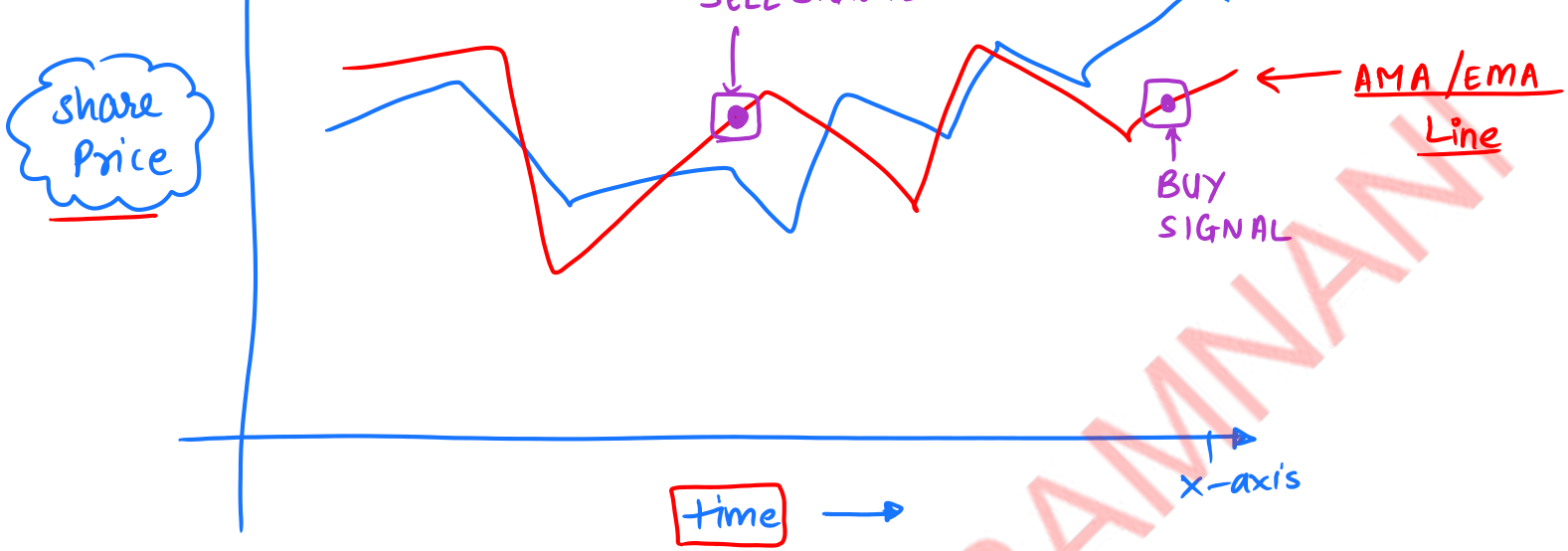
SELL → When to SELL? → SELL SIGNAL

TOOLS

Moving Averages

- Arithmetic Moving Average (AMA)
- Exponential Moving Average (EMA)

AMA and EMA are LINES



EMA ⟹

Next forecast = Previous forecast + [α × e_t]

Next forecast → f_t → EMA → 52-weeks / 10-DAY

Previous forecast → f_{t-1}

α → exponent of EMA → $\left[\frac{2}{\text{Period}}\right]$

e_t → error → {Actual Closing Price (A_t) − Previous forecast (f_{t-1})}

Table :- (6) columns

Period ①	closing Price (A_t) ②	f_{t-1} ③	e_t ④	$\alpha \times e_t$ ⑤	f_t = EMA ⑥
✓	✓	Previous f_t	② − ③	α × ④	③ + ⑤
✓	✓				✓
✓	✓				✓
✓	✓				✓
					✓

Question :-

$\alpha = 0.062$

(6) column Table :-

(1) Period (DAYS)	(2) Closing Price (A_t)	(3) f_{t-1}	(4) = (2) − (3) e_t	(5) = α × (4) $(\alpha) \times (e_t)$	(6) = (3) + (5) f_t EMA
6	14522	15000	(478)	(29.636)	14970.364
7	14925	14970.364	(45.364)	(2.812)	14967.55
10	15222	14967.55	254.45	15.776	14983.32
11	16000	14983.32	1016.68	63.034	15046.354
12	16400	15046.354	1353.646	83.926	15130.28
13	17000	15130.28	1869.72	115.922	15246.202
17	18000	15246.202	2753.798	170.735	15416.937

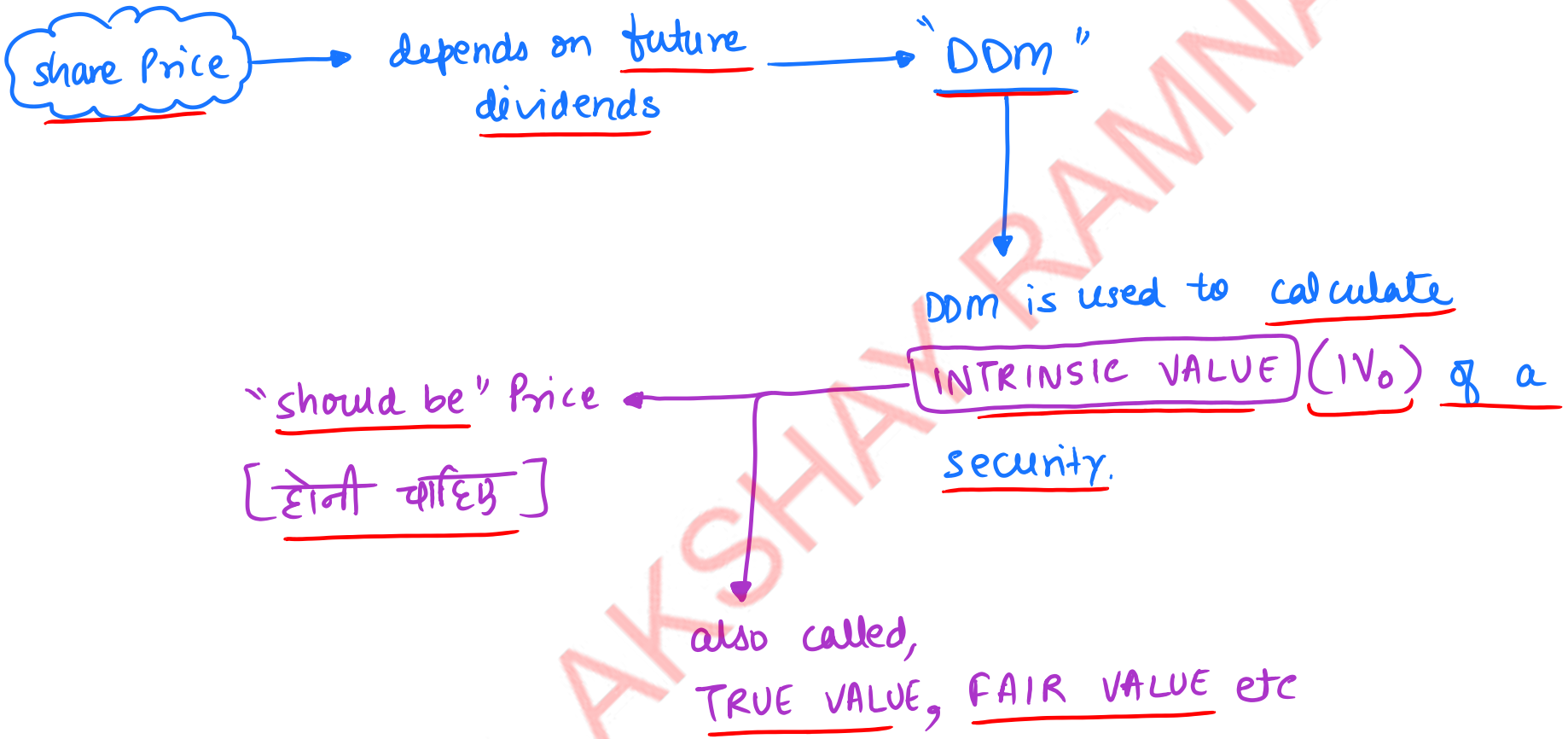
⇓

UP trend

⇓

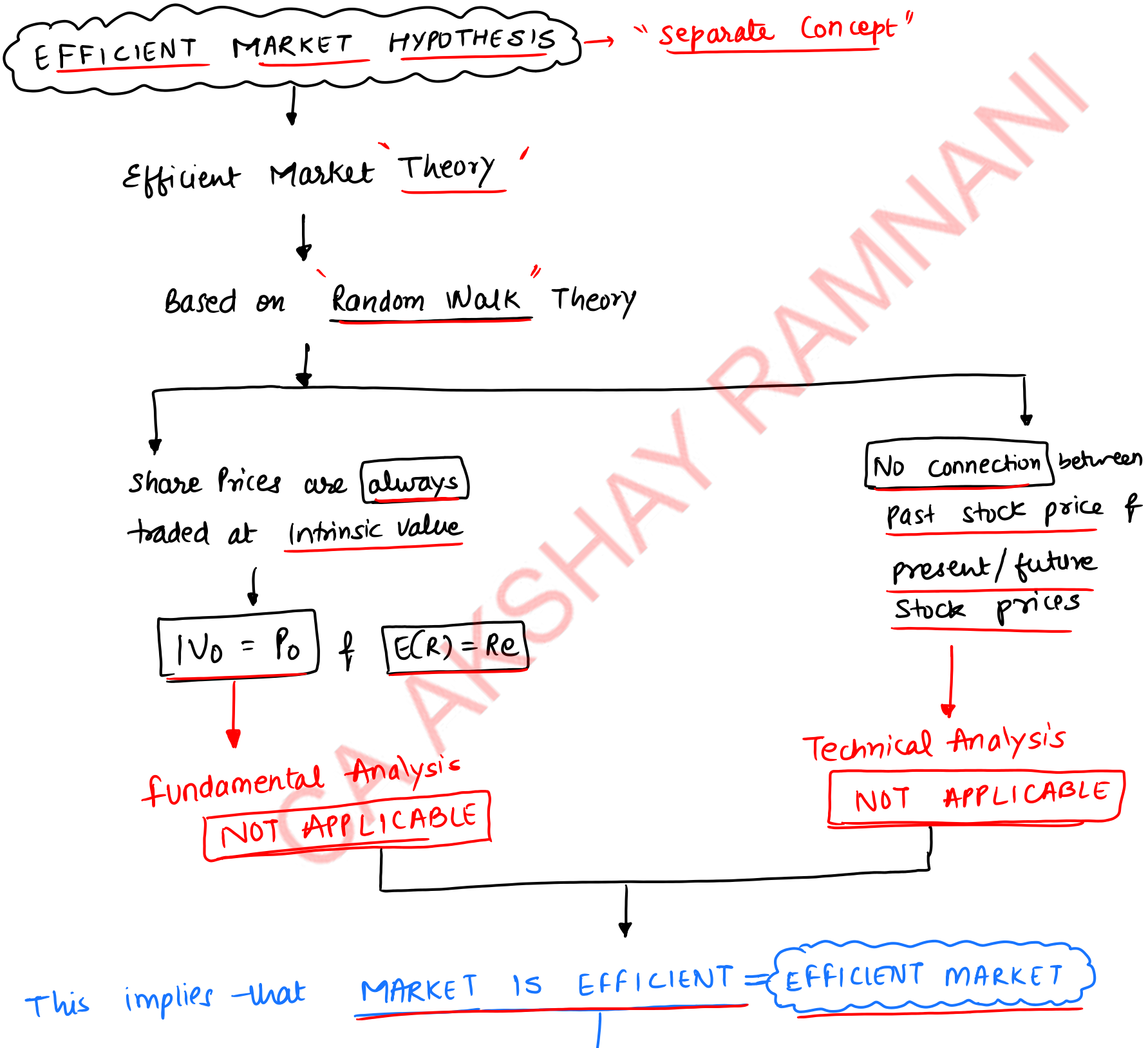
Bullish trend

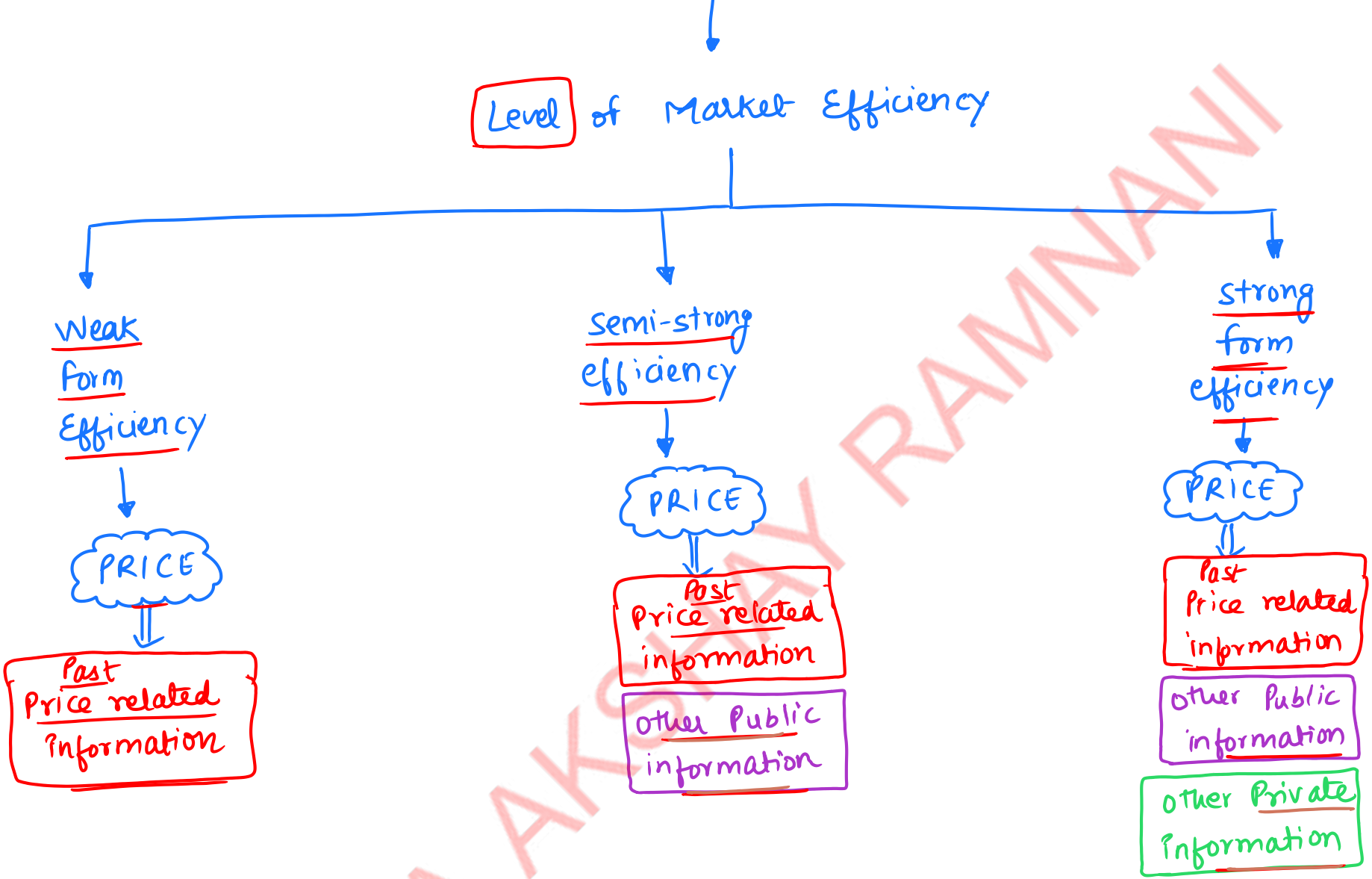
Fundamental Analysis



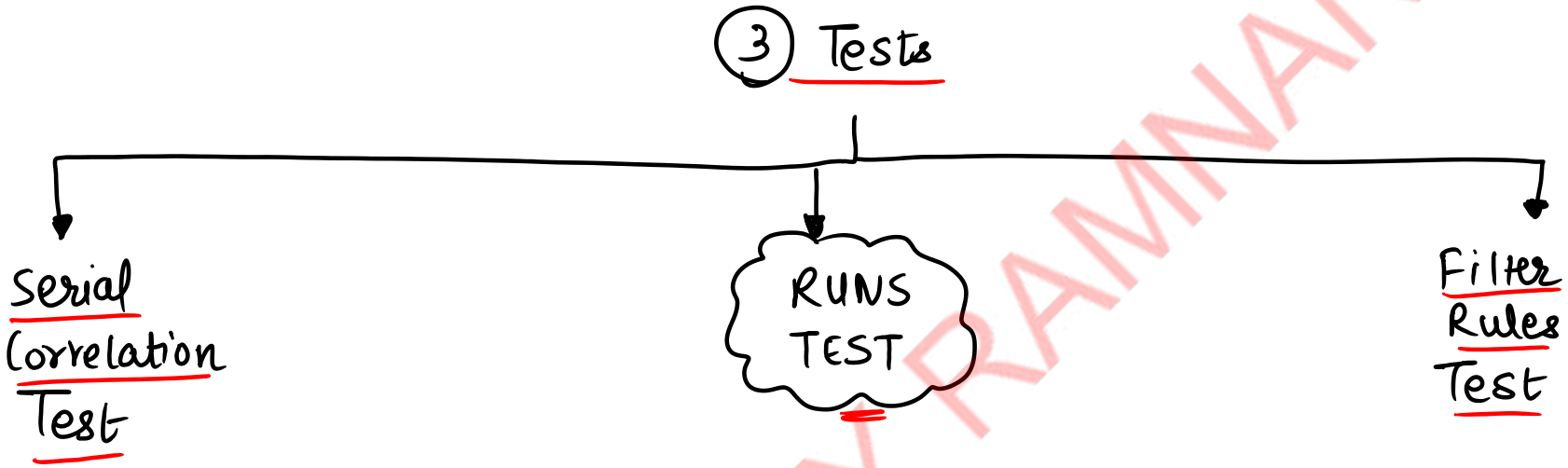
PRICE → DECISION TABLE → No (3)

	"Should be" Price	Actual Price	Observation	Decision/Action
(1)	IV_0	$> P_0$	underpriced / undervalued	BUY
(2)	IV_0	$< P_0$	overpriced / overvalued	SELL
(3)	IV_0	$= P_0$	no mispricing / correctly valued	BUY / HOLD

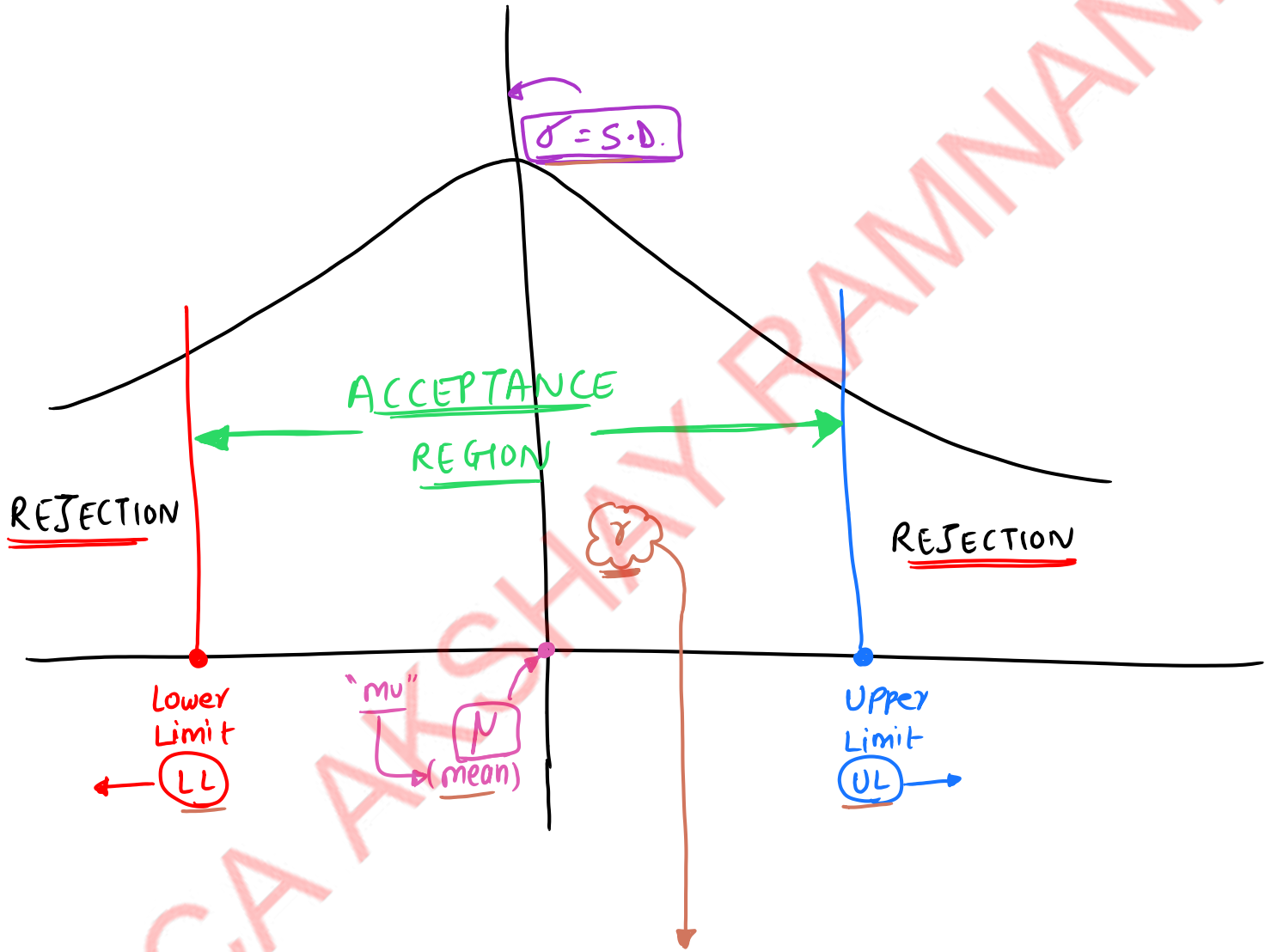




Theoretically verify → Weak form of Efficient Market Hypothesis



RUNS TEST



If (r) lies here, i.e. in acceptance region,

MKt has weak form of efficiency.

∴ Returns cannot be earned with

certainty.

steps :-

① Calculate :-

n_1 = number of (+) → price rise

n_2 = number of (-) → price fall

r = number of changes i.e. [+ to −] (or) [− to +]

[include 1st one]

② Calculate :-

$$\mu \text{ (mean)} = \frac{2n_1 n_2}{n_1 + n_2} + 1$$

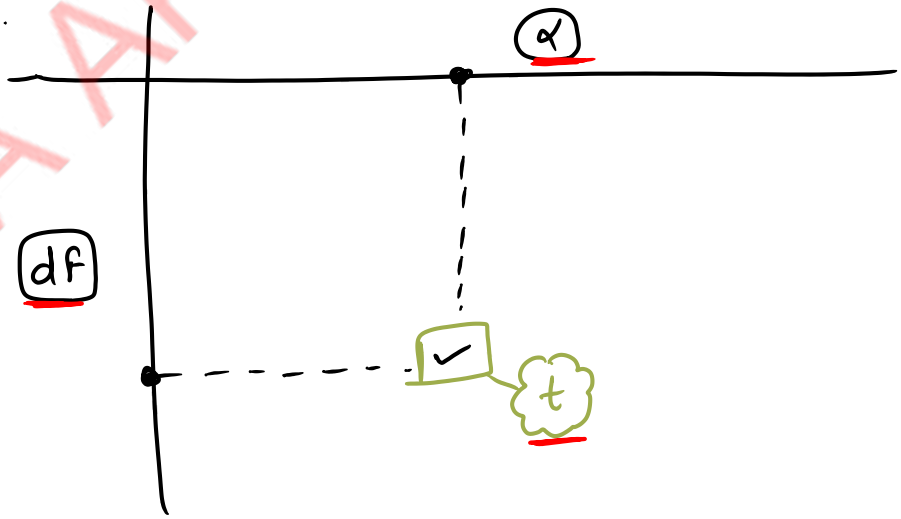
$$\sigma \text{ (SD)} = \sqrt{\frac{(\mu-1)(\mu-2)}{n_1 + n_2 - 1}}$$

degree of freedom (df) = $n_1 + n_2 - 1$

α = Level of significance

(3) Select t from T-Distribution Table using df and α

T-Distribution Table



④ Calculate :-

Lower Limit (LL) = $\bar{x} - [t \times \sigma]$

Upper Limit (UL) = $\bar{x} + [t \times \sigma]$

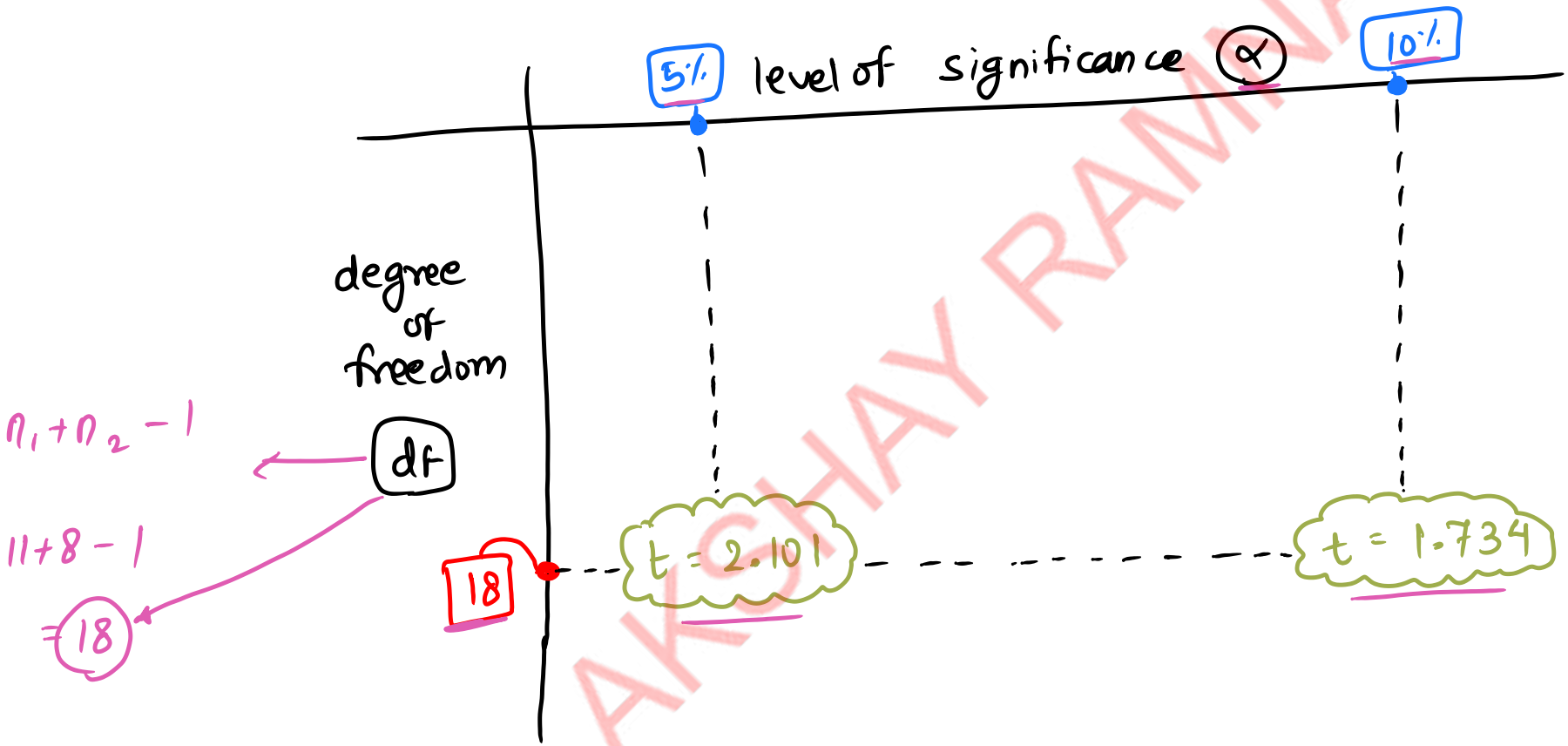
⑤ Check whether $\bar{x}$ lies between LL and UL.

"Acceptance Region"

Shortcut to remember → n_1 n_2 $\bar{x}$ → $\bar{x}$ σ t → LL UL

Question :-

Given :-



steps :-

n_1 ✓ n_2 ✓ γ ✓ → μ ✓ σ ✓ t → LL UL

Date	Closing Sensex	Sign of Price Charge
1.10.07	2800	
3.10.07	2780	-
4.10.07	2795	+
5.10.07	2830	+
8.10.07	2760	-
9.10.07	2790	+
10.10.07	2880	+
11.10.07	2960	+
12.10.07	2990	+
15.10.07	3200	+
16.10.07	3300	+
17.10.07	3450	+
19.10.07	3360	-
22.10.07	3290	-
23.10.07	3360	+
24.10.07	3340	-
25.10.07	3290	-
29.10.07	3240	-
30.10.07	3140	-
31.10.07	3260	+

n_1 = no. of (+) = 11

n_2 = no. of (-) = 8

σ = 8

$$N = \frac{2 n_1 n_2}{n_1 + n_2} + 1 = \frac{2 \times 11 \times 8}{11 + 8} + 1 = 10.26$$

$$\sigma = \sqrt{\frac{(N-1)(N-2)}{n_1 + n_2 - 1}} = \sqrt{\frac{(10.26-1)(10.26-2)}{11 + 8 - 1}}$$

$$= 2.06$$

$t = 2.101$

$t = 1.734$

LL = $N - [t \times \sigma]$

LL = $10.26 - [1.734 \times 2.06]$

$= 10.26 - [2.101 \times 2.06]$

$= 5.932$

$= 6.688$

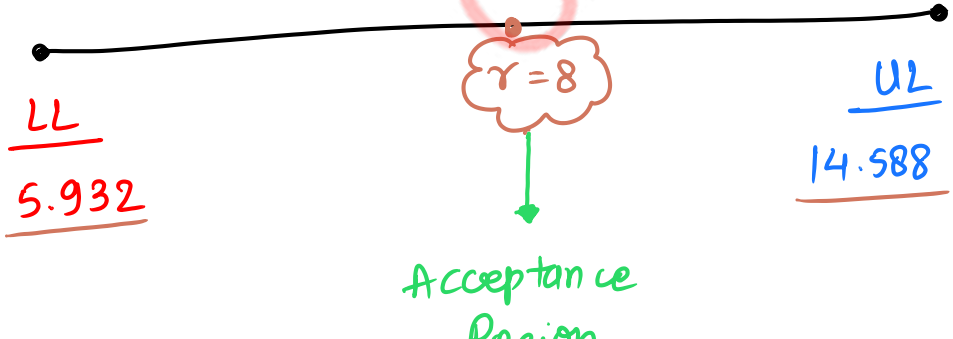
$UL = \mu + [t \times \sigma]$

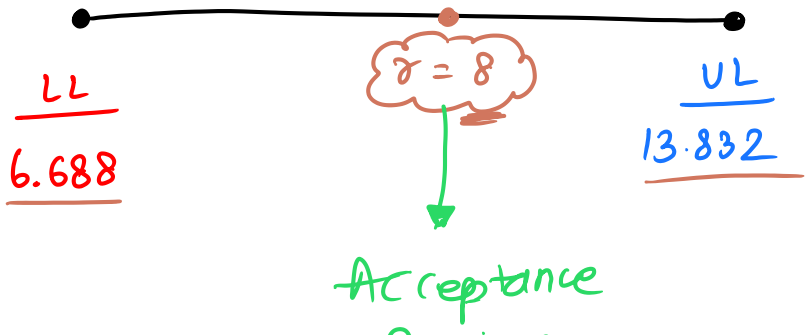
$= 10.26 + [2.101 \times 2.06]$

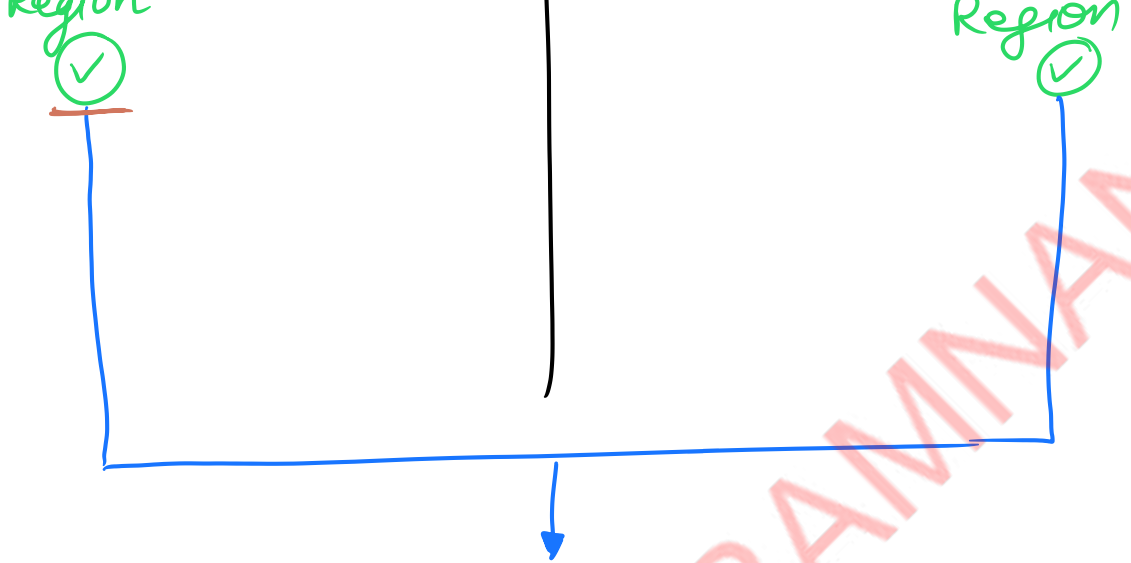
$= 14.588$

$UL = 10.26 + [1.734 \times 2.06]$

$= 13.832$







Market shows **weak form** of efficiency.

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2.2.3.1 EMA

3 Efficient Market Hypothesis

3.1 Levels of Market Efficiency

3.1.1 weak form Efficiency ⇒ Weak form of Efficient Mkt. Hypothesis.