

Week 2 SQE QCL

Error:

code mai developer sy ki

gaya mistake

{ any error:
logical

Defect:

Test k duran mistake pta
chahna

Bug:

Tis my defect bnaya, or wo accept
by tg.

- QA ny jh defect btayki hai, binary
- code mai jh bug hai.

Failure:

Error
mistakes

Defect

Faulty
Bugs

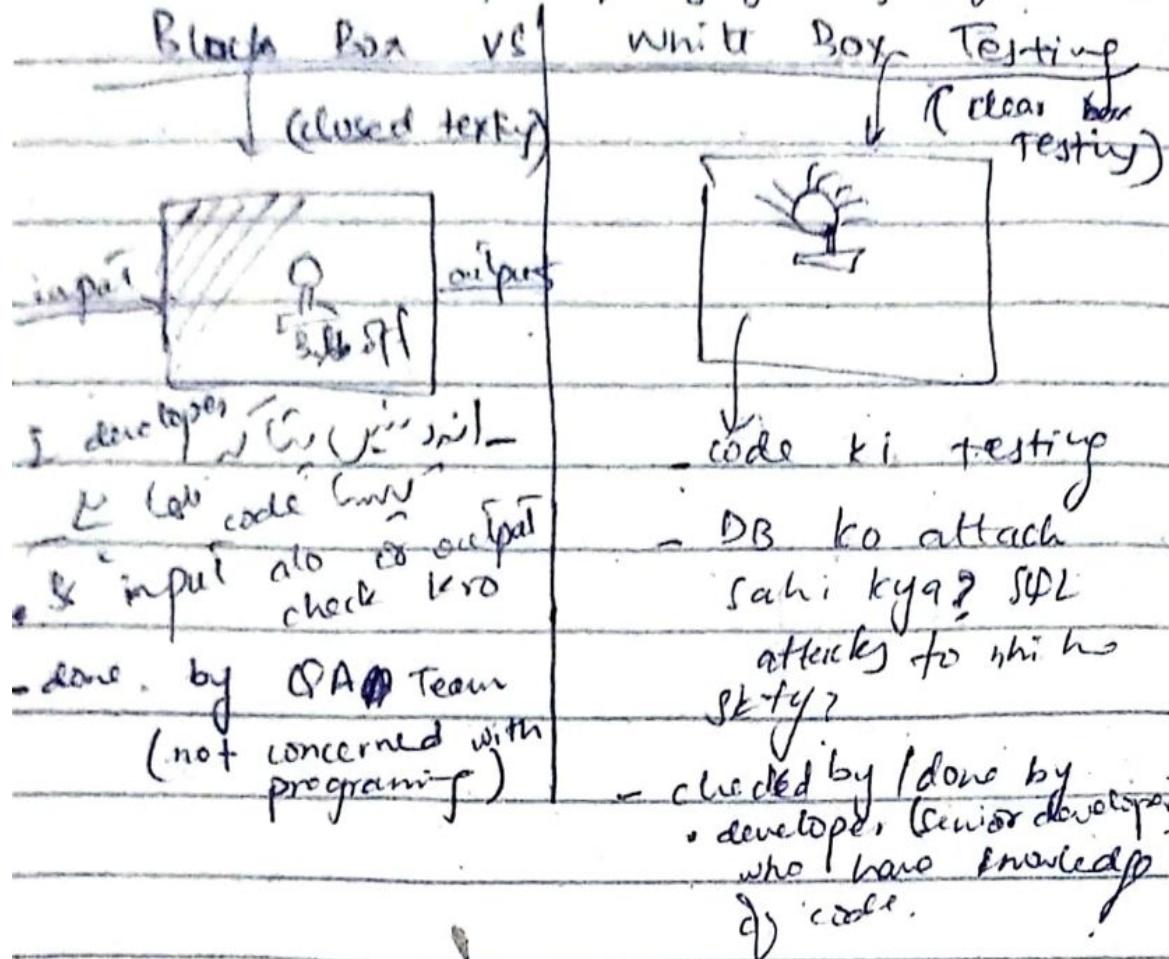
water
(till knees)

Failure

(\angle \angle is w. w.)

(not
attract
for water)

~~to detect failure by backtrace~~ to failure by backtrace
Testing -
 1. to detect defects
 2. to improve quality (by fixing defects)



Q: Diff b/w Black Box Testing &
 White "

Regression Testing vs Re Testing

- Test case fail - leu k aayi othao hai
- leu utar k saf kr k dubara lgana,
- Ek Test case ko dubara test kyna
 keyboard tk kriwani k bad Re Testing
 delhing likya yeh sahi chal rhi.
- Jo test cases phly pass huyi, un hi
 keyboard tk kriwani k bad regression
 testing

→ Agar system mai naya feature add hoga to Regression Testing

must hai.

→ Retesting - fail code ki hoti hai

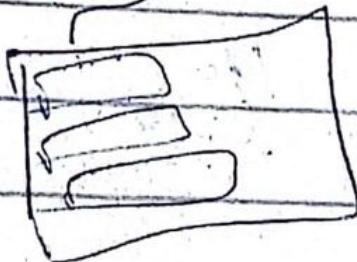
Action	Expected output	Actual output	Pass/Fail
--------	-----------------	---------------	-----------

click button

a screen open

not open

Pass/Fail



Q Test Report pattern

Week 2 Lec 2 SQA

↳ SDLC → for developers
↳ STLC (Software Testing Life Cycle)
→ for SQA

① Requirements

- functional req
- non-func req
- (Features)
 - login
 - log out
 - add account
 - balance inquiry
 - transactions
 - cash withdraw
- speed i.e. sec by phy transactor
- 24x7 backup
- security

→ written in SRS document

② scheduled,

design

Features	Total test cases	checked	Pass	Fail	Priority	Date
balance inquiry	10	10	8	2	High	01-01 01-01
login	50	30	15	15	Low	

③ Test Cases

- mostly written by senior bnd
- or jis my testing krni hoti hai

④ Testing Start

→ from features from high to low priority.

- Status (Pass/Fail)

- done by SQA ka bnd

→ developer & SQA team work parallel

→ SQA detect defect & developer resolve bug

→ If test cases fail kyun nai, SQA team wo test cases developed ko kya deti hai?

Details of wrong test cases is written in Test Case if deliver to developer

⑤ Fail deliver developer

Bug Fixing

→ 1.1, 1.2, 1.3 ...

	Features	Total
1	balance inquiry	10

⑥ Retesting

Regression Testing

→ QA is key part of delivery process
In case of test cases in retesting or regression testing
is not available

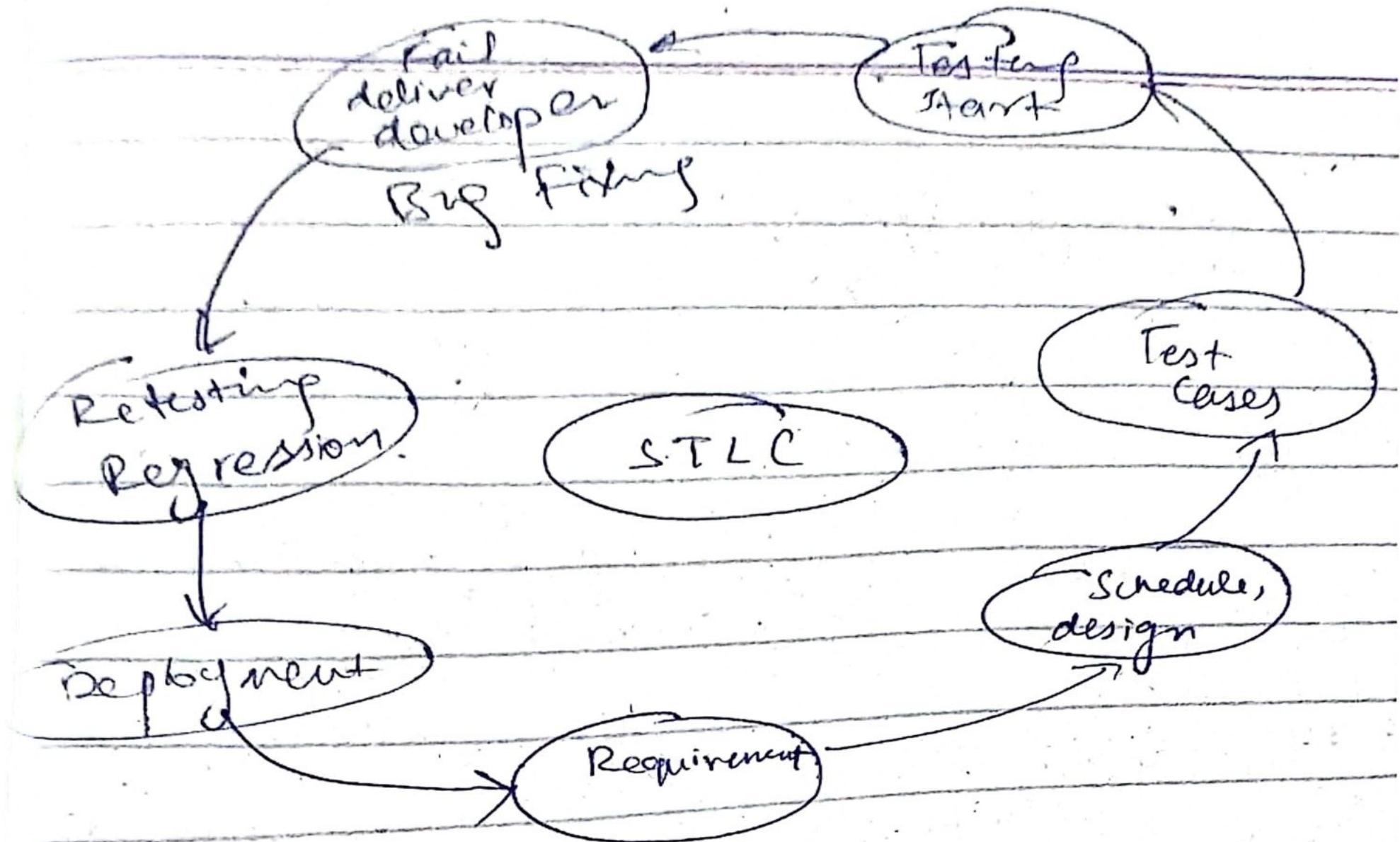
→ job fail try 1.8, 1.9

→ back 1.1 - 1.7, 1.10 is retesting

⑦ Deployment

• Release / version

→ Test case Report is much important.

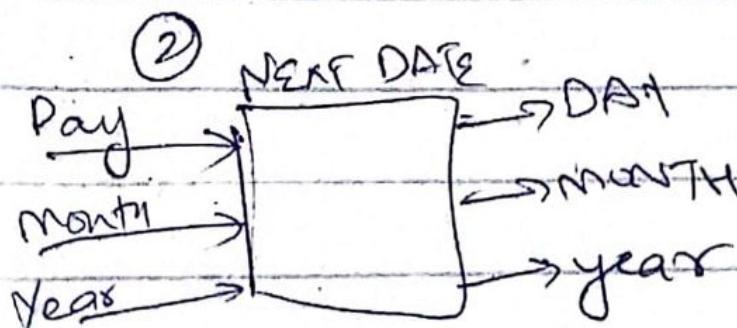
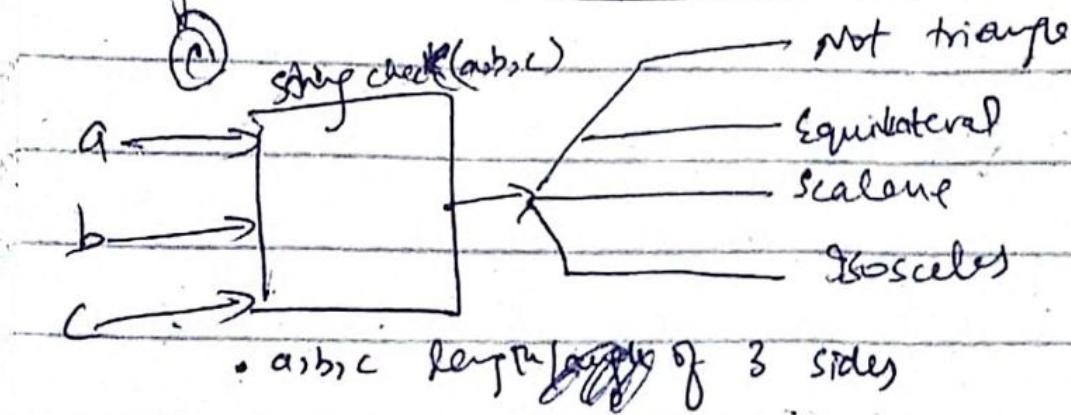
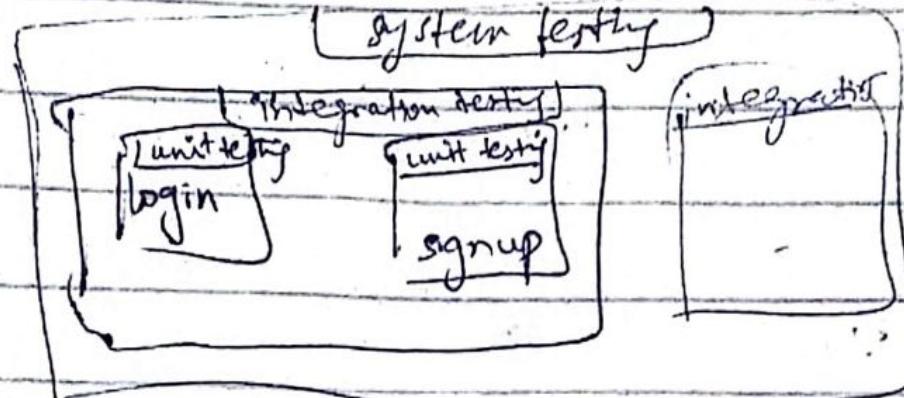


Week 3

lec SQA

UNIT TESTING

unit → very small functional blocks
units combine to form integration Testm.
• login + sign up • integration testing → system testing



TRIANGLE PROBLEM

$c_1: 1 \leq a \leq 200$	$c_4: a < b+c$	<p>Sum of 2 sides is greater than the third side</p> <p>→ Any given 3 numbers have to form triangle not given else not.</p>
$c_2: 1 \leq b \leq 200$	$c_5: b < a+c$	
$c_3: 1 \leq c \leq 200$	$c_6: c < a+b$	

→ c_1, c_2, c_3 → If any conditions false then invalid
 AND simple input check

$$a = 5$$

$$b = 6$$

$$c = 10$$

$c_7: a = b \& b = c$ (Equilateral Δ)

Scalene (3 sides equal no not 3 sides different no)

$c_8: a \neq b \& b \neq c$ (Scalene Δ)

& $a \neq c$

Isosceles

$c_9:$

$a = b$ or $a = c$ or $b = c$ (Isosceles Δ)

$$a = 10$$

$$b = 11$$

$$c = 12$$

values ✓
 triangle ✓ (sum of 2 sides must be greater than the third one)

$a = 1$ } values ✓

$b = 4$ } triangle ✓

$c = 4$ } isosceles

$a = 1$ } values ✓

$b = 4$ } Not a

$c = 3$ } value triangle

NEXT DATE

a, b, c

if ($(a \geq 1 \text{ } \& \& \text{ } a \leq 200) \& \& (b \geq 1 \text{ } \& \& \text{ } b \leq 200)$
 $(c \geq 1 \text{ } \& \& \text{ } c \leq 200)$)

{ if ($a < b+c \text{ } \& \& \text{ } b < a+c \text{ } \& \& \text{ } c < a+b$)

{ if ($a = b \text{ } \& \& \text{ } b = c$)

{ Equilateral }

{ else if ($a = b \text{ or } b = c \text{ or } a = c$) }

{ Isosceles }

{ else if ($a \neq b \text{ } \& \& \text{ } a \neq c \text{ } \& \& \text{ } b \neq c$) }

{ Scalene }

{ else }

{ not A }

{ else }

{ Invalid Inputs }

NEXT DATE

$$C_1 = 1 \leq \text{Day} \leq 31$$

$$C_2 = 1 \leq \text{Month} \leq 12$$

$$C_3 = 1990 \leq \text{Year} \leq 2024$$

Day, Month, Year

boolean LeapYear = 0;

if (Month == 3 || Month == 5 || Month == 7 || Month == 8 || Month == 10)

 if (Day <= 31)

 Day += 1

 }

 else if (Day == 31)

 Day = 1

 Month += 1

 }

else if (Month == 4 || Month == 6 || Month == 9 || Month == 11)

 if (Day < 30)

 Day += 1

 }

 else if (Day == 30)

 Day = 1

 Month += 1

 }

else if (Month == 12)

 if (Day < 31)

 Day += 1

 else if (Day == 31)

 Day = 1

 Month = 1

 Year += 1

else if (Month == 2)

else if (Month == 2)

if (day < 28)

day += 1

(Leap year logic day)

else if (day == 28 & leap year == 0)

day = 1

month++

else if (day == 28 & leap year == 1)

day += 1

else if (leap year == 1 & day == 29)

day = 1 ; month++

else if (day == 29 & leap year == 0)

invalid

Week 3

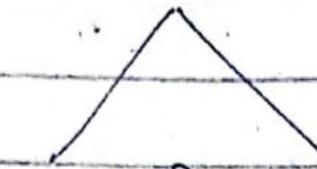
~~TODAY IS 6c.2~~

A system that accept $\frac{\text{variable}}{\text{let num}}$

18 ~~10~~

56

let num



Valid (within range)

Invalid (out of range)

min 18

min - 17

max 56

Max + 57

(nominal)
(middle value) 37

min + 19

max - 55

month
12

date
31

1

(UNIT TESTING)

first
technique
in unit testing

Boundary Value Testing

Normal
(valid)

Robust
(invalid + valid)

Worst Case
(valid)

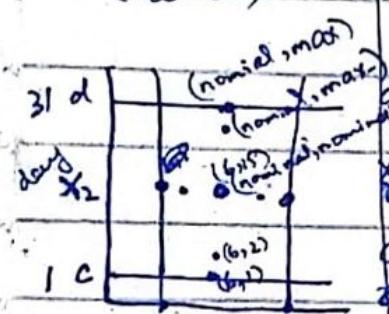
Robust Worst
Case
(invalid + valid)

31 d	(nominal, max)
day	(nominal, min)
x ₂	.
.	.
1 c	(b, 2)
.	.
a: x ₁ , b	

.	.
.	.
x ₂	.
.	.
a	x ₁
b	

d	.	.	.
x ₂	.	.	.
c	.	.	.
a	x ₁	b	

d	.	.	.
x ₂	.	.	.
c	.	.	.
a	x ₁	b	



13

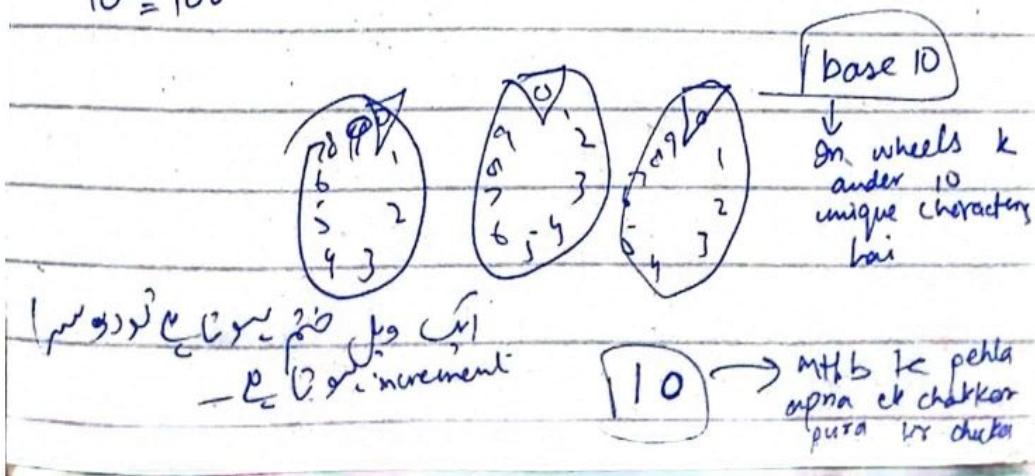
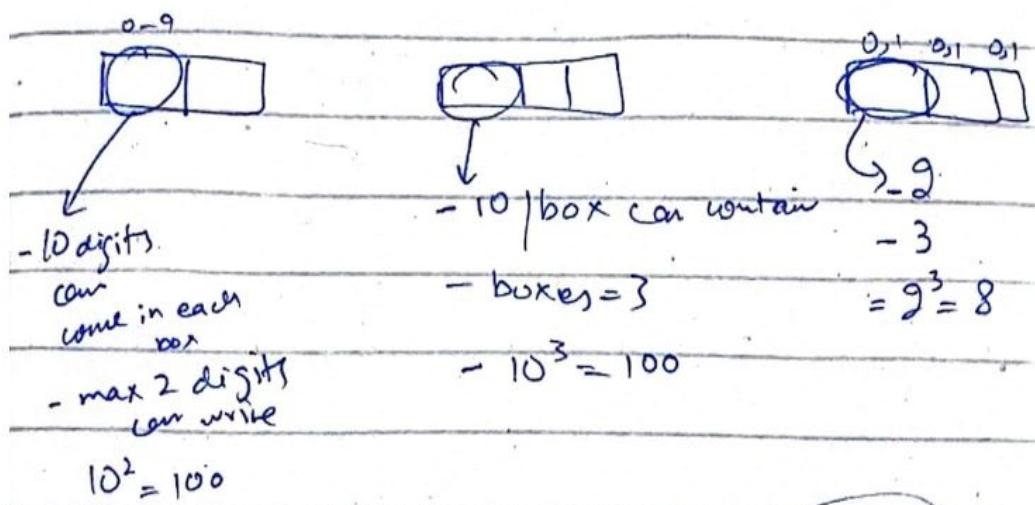
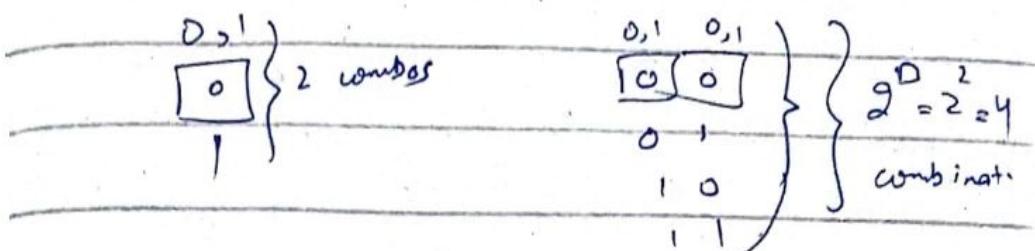
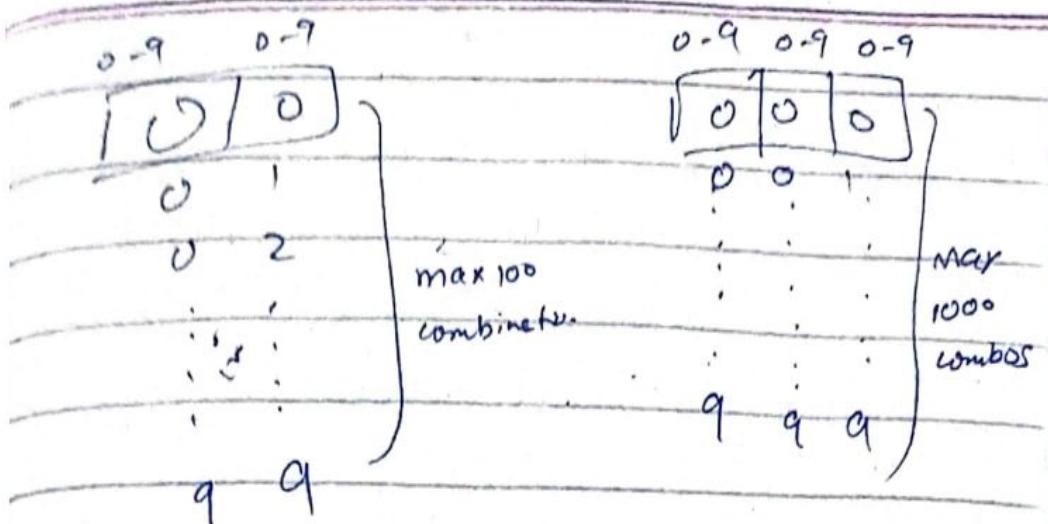
14

15

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1st time date

max combinations

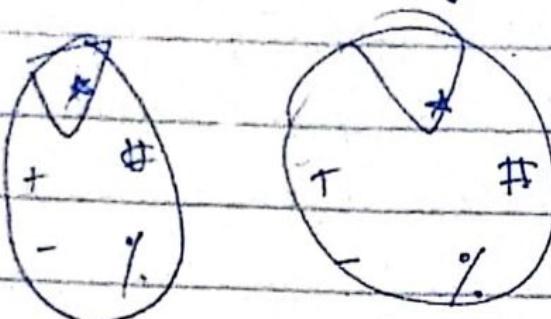


Base 2 → binary no's
2 unique (0,1)
char's no's

Hex 16 → 16 unique character
0-9, A-F

* #
+ - % - + } new counting
number system

2 digits counting



$$\begin{array}{r} \rightarrow 5 \\ -2 \\ = 5^2 = 25 \end{array}$$

0	*	#
1	#	#
2	*	%
3	*	-
4	*	+
5	#	*
6	#	#
7	#	%
8	#	-
9	#	+

24 + +

25 total combos

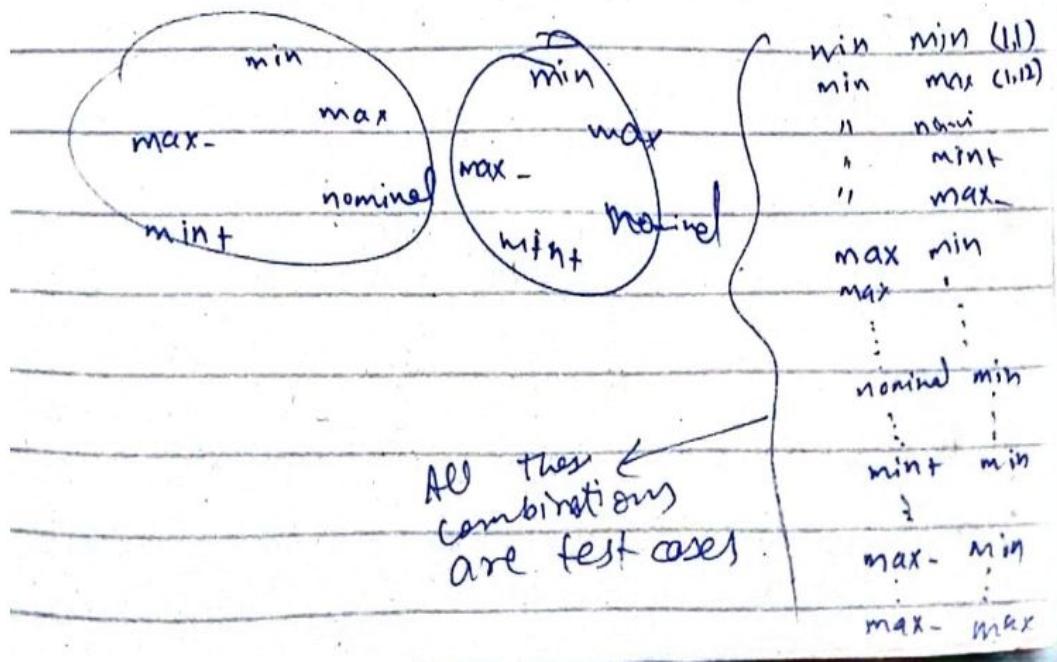
A 2	A 2	$2^4 = 16$
A 2	A 2	<i>flexaPtion</i>
E 2 6		
E 2 2	E 2 2	
E 2 6	E 2 6	
AA		
AB		
..		
A 2		
B A		
B B		
..		
2 2		

Normal

2 vars $\rightarrow x, y$ \leftarrow monthly P_2

~~01 01~~

$\Rightarrow 5$ (valid \rightarrow min, 12 max, nominal, 6 min, 2 max)
 - max 2 digits
 $= 5^2 = 25$



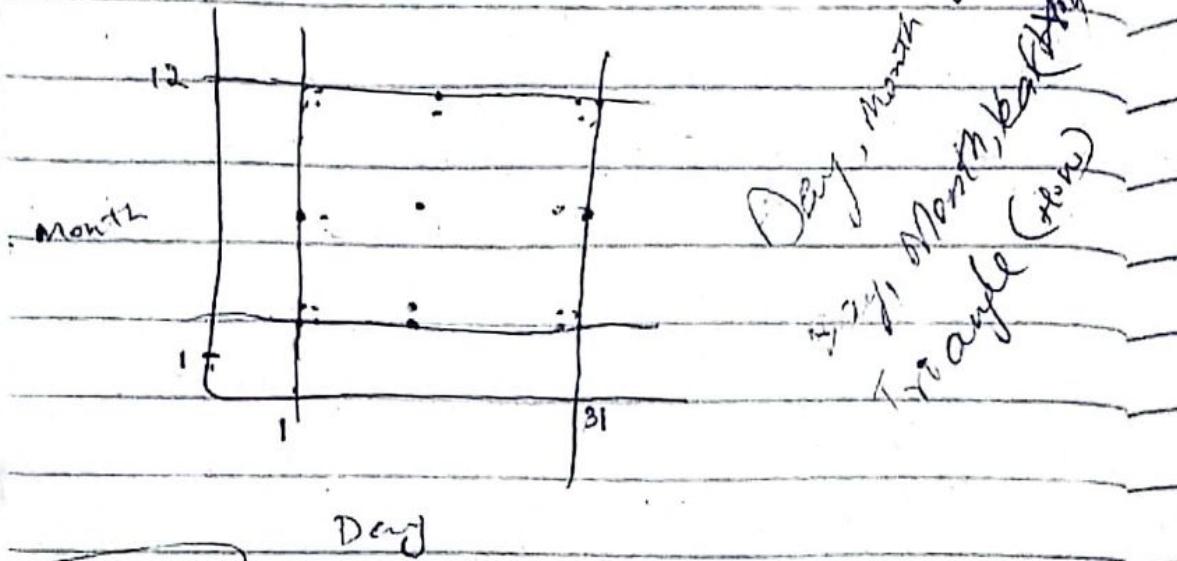
\rightarrow 9 circles in normal

→ 25 combinations

no Hm song combination like day
gym,

Let's look at normal & test cases
Sof whi nr gy, jin mai
~~as~~ nominal must no ger.

→ lekis worst case mai pony
25 use hn gy



Summary

→ Normal: nominal + within range

→ Worst case: corners + within range

→ Robust BVT: normal + within + out of range

e.g. Robot moves; corners + within + out of range

week 5.

lect 2 SQA

lect → in group
offical

Selenium → black box
testing of web application

Selenium Chrome Extension

- ① open - find target
cat US Jewell
j / save On file excel
② click assert
echo and value
③ type target +
send key target +
value - ENTER
④ store text
value (price)
variable

Android Testing
Desktop App Testing

which tools?

- ⑤ assert target
count
value 278

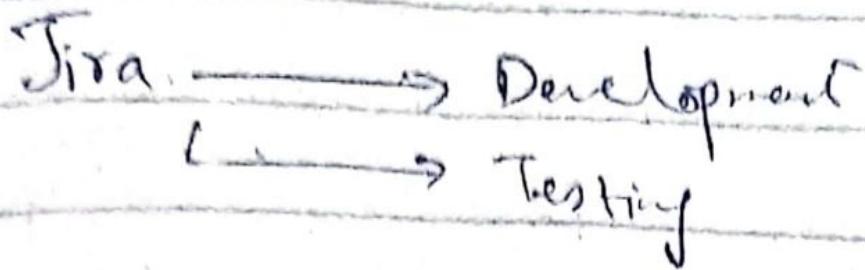
- ⑥ if (and)
true
false
else
and



Record no. 90 ^{selection}
226 ft - top C 78

Week 6

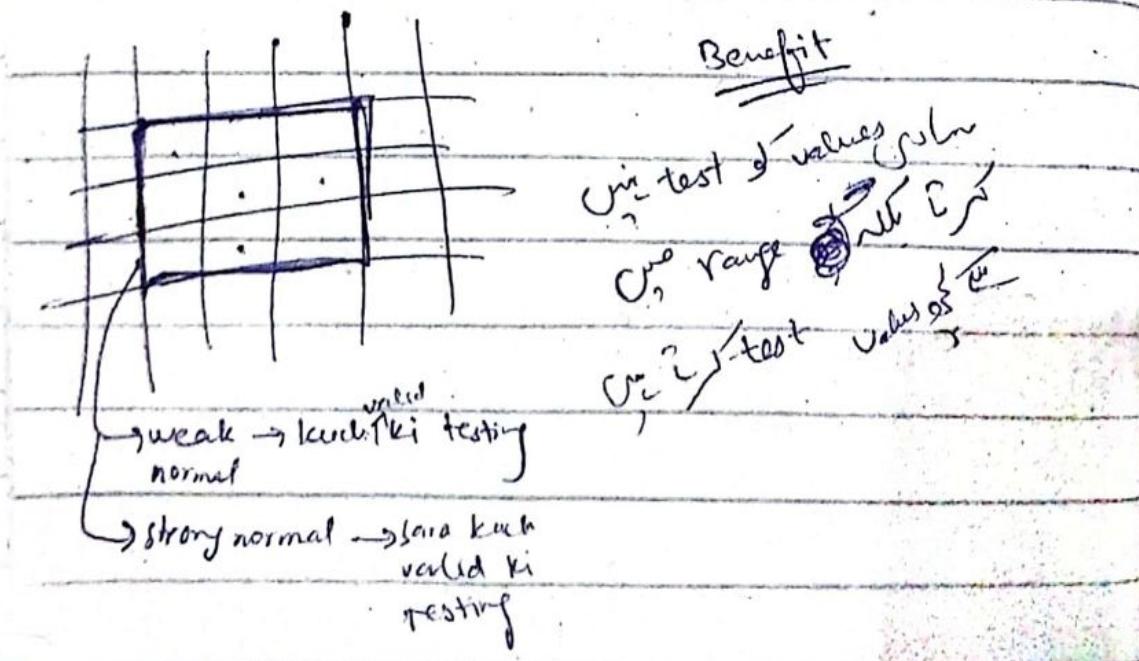
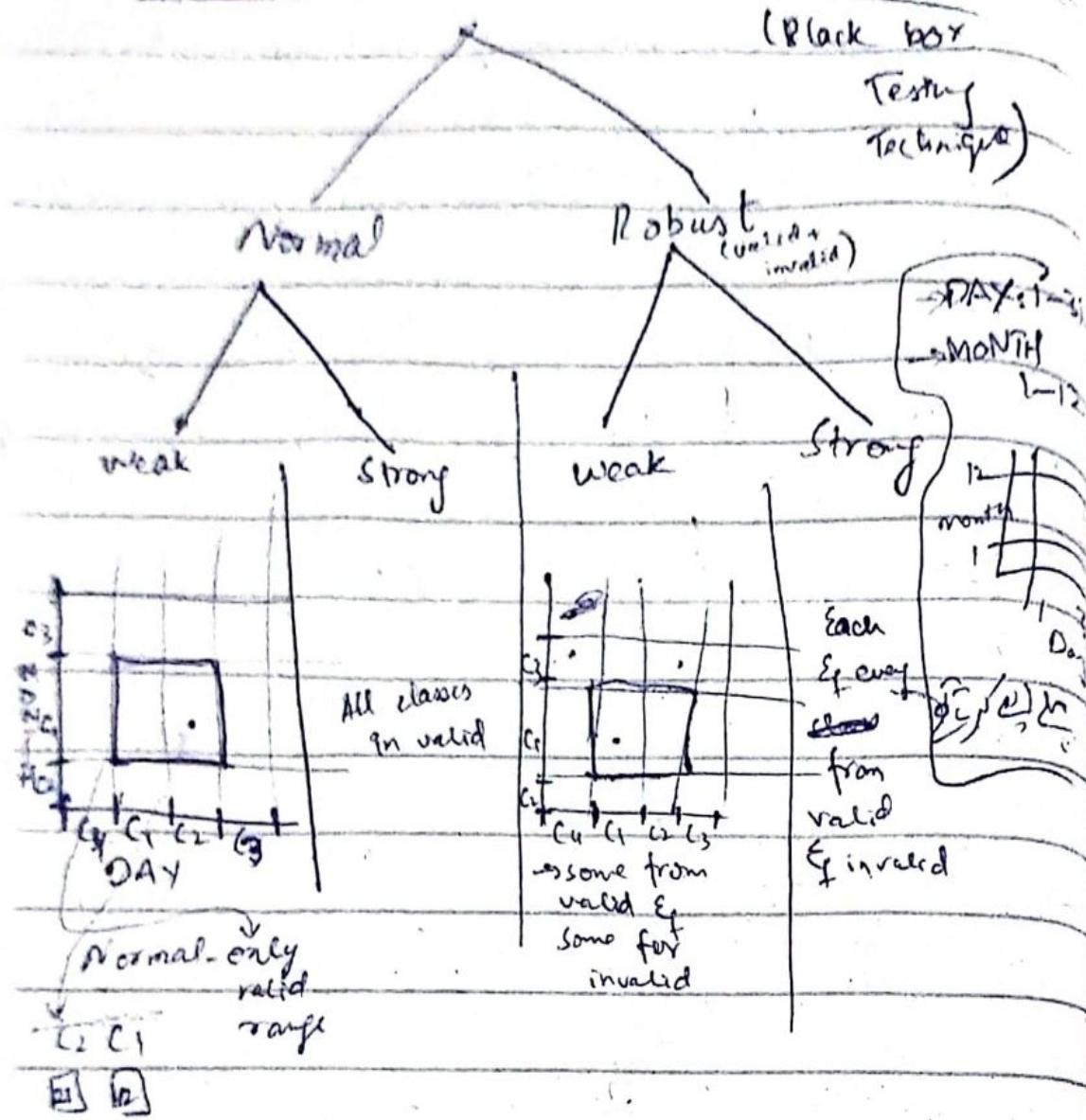
~~lect SGE~~



Jira Software Mgmt

Manager → create 5 tasks developer do
which manager → perform tasks for test
ex. → create tasks for test
Manager → which tester do
ex. → generate bugs

EQUIVALENCE CLASS TESTING



classes of DAY

valid { DAY01 = 1 - 28 \in 3 classes
 DAY02 = 29 - 31 \in 3 range
 invalid { DAY03 = 31 greater . choose value of day
 DAY04 = 1 less \in 3 set

valid range \rightarrow M01 = 1 - 12

invalid M02 = 1 less

invalid M03 = 12 greater

DB Base 10

$$\begin{aligned} 10 \times 10 &= 100 \\ 10^2 &= 100 \end{aligned}$$

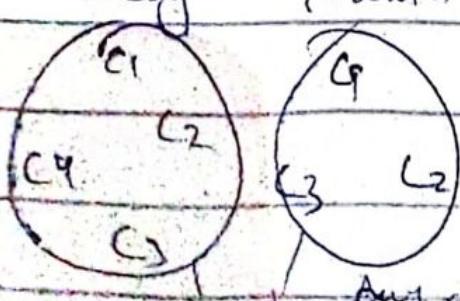
DAY MONTH

C_1 $\boxed{4}$ $\boxed{3}$ (3 classes of month)
 C_2
 C_3 $4 \times 3 = 12$

3 classes
of day

$$\begin{array}{c} \boxed{1} \quad \boxed{2} \\ \downarrow \quad \downarrow \\ 2 \times 2 = 4 \end{array}$$

$$\begin{array}{c} \boxed{1} \quad \boxed{2} \quad \boxed{3} \\ \downarrow \quad \downarrow \quad \downarrow \\ 2 \times 2 \times 2 = 8 \end{array}$$



Any random value from

$$C_1 \cap C_2 = 25 \quad 7$$

C1 C3

$$\begin{array}{c} \boxed{1} \quad \boxed{2} \\ \downarrow \quad \downarrow \\ 2 \times 2 = 4 \end{array}$$

$$2 \times 3 = 6$$

Software Test Book

Chapter no. 2

Example: 2.2 ✓

2.3 ✓

2.4 } karna nahi

2.5 }

Chapter 5

complete

Chapter 6

6.1

~~6.2~~

6.3

6.4 → 6.7 do

6.5 → we do

Week 6

SOP

leg 2

Paper Question

Equivalence class Testing

Normal

Robust

weak

Strong

weak

Strong

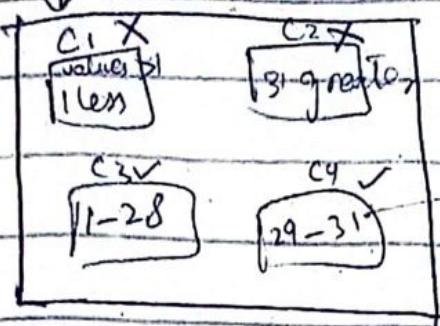
NEXT DAY PROBLEM

Black box testing



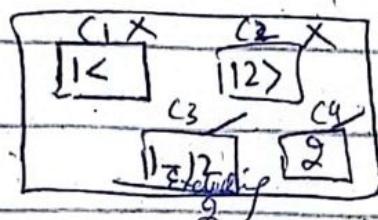
Day ($1 \rightarrow 31$) valid range

$1 \leq 88 \leq 31$

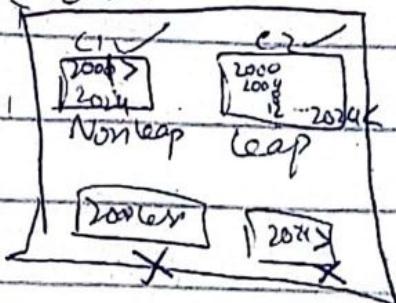


→ separate class
bcz this range is
little bit critical.

Month



YEAR



Testing

D

M

Y

→ combination

$dc_1 \quad mc_1 \quad yc_1$
 $dc_2 \quad mc_2 \quad yc_2$
 $dc_3 \quad mc_3 \quad yc_3$
 $dc_4 \quad mc_4 \quad yc_4$

40 | 2026

Possible combination $\rightarrow 4 \times 4 \times 4 = 64$

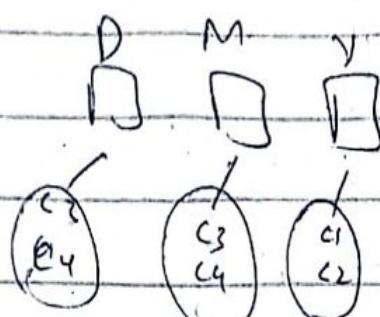
• 64 combination \rightarrow all valid all invalid

Robust

All robust 64 \rightarrow strong Robust

30, 10 \rightarrow weak Robust

Valid(normal)



$$2 \times 2 \times 2 = 8$$

All 8 \rightarrow strong Normal
in context

Some from S \rightarrow Weak

combinations			Test-cases			Normal		
D	M	Y	Input values	Expected output	Actual output	Stat.		
C1	C2	C3	0	2007 day, month	-17	#		
C4	C3	C2	30	2004 01 07 2004 03 06 2004 01 06	#	#		

Commission

Problem

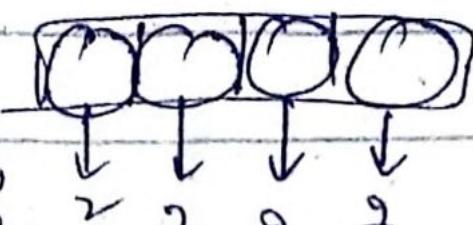
→ Vaidi dekhni hai

Week 7

SDSE GCL

DECISION TABLE BASED TESTING

4 conditions



possible values
True/false

$$2 \times 2 \times 2 \times 2 = 2^4 = 16$$

1	1	1	1
---	---	---	---

0 0 0 0
0 0 0 1

0 0 1 0
0 0 1 1

0 1 0 0
0 1 0 1

0 1 1 0
0 1 1 1

1 0 0 0
1 0 0 1

1 0 1 0
1 0 1 1

1 1 0 0
1 1 0 1

1 1 1 0
1 1 1 1

Triangle problems

$$\angle A = 55^\circ \quad \angle B = 45^\circ$$

→ Don't care
not tested

Conditions / Combinations

for D C
was in
not to
check term
ki > what
nali
nai

$$a = b ?$$

$$a = c^2$$

$$b=c^2$$

Not a triangle \neq \neq \neq \neq \neq \neq \neq

E.15

950

See

Expected result

$$\begin{array}{ll} C_1 & a < b + c \\ C_2 & b < a + c \\ C_3 & c < a + b \end{array}$$

$$Cu \quad a=b \not\equiv_{\mathcal{E}_f} b=c$$

Q5. $a=b$ or $a=c$
 $b=c$
→
So solve

C6 $a \neq b$ ~~?~~
 &
 $b \neq c$ Scaleu
 &
 $a \neq c$