

GATE

CRASH COURSE

ALL Branches

Subject

General Aptitude

Lec : 08, Directions and Coding Decoding

By – Amulya Ratan Sir



Topics *to be covered*

1 DIRECTIONS ✓

2 CODING DECODING





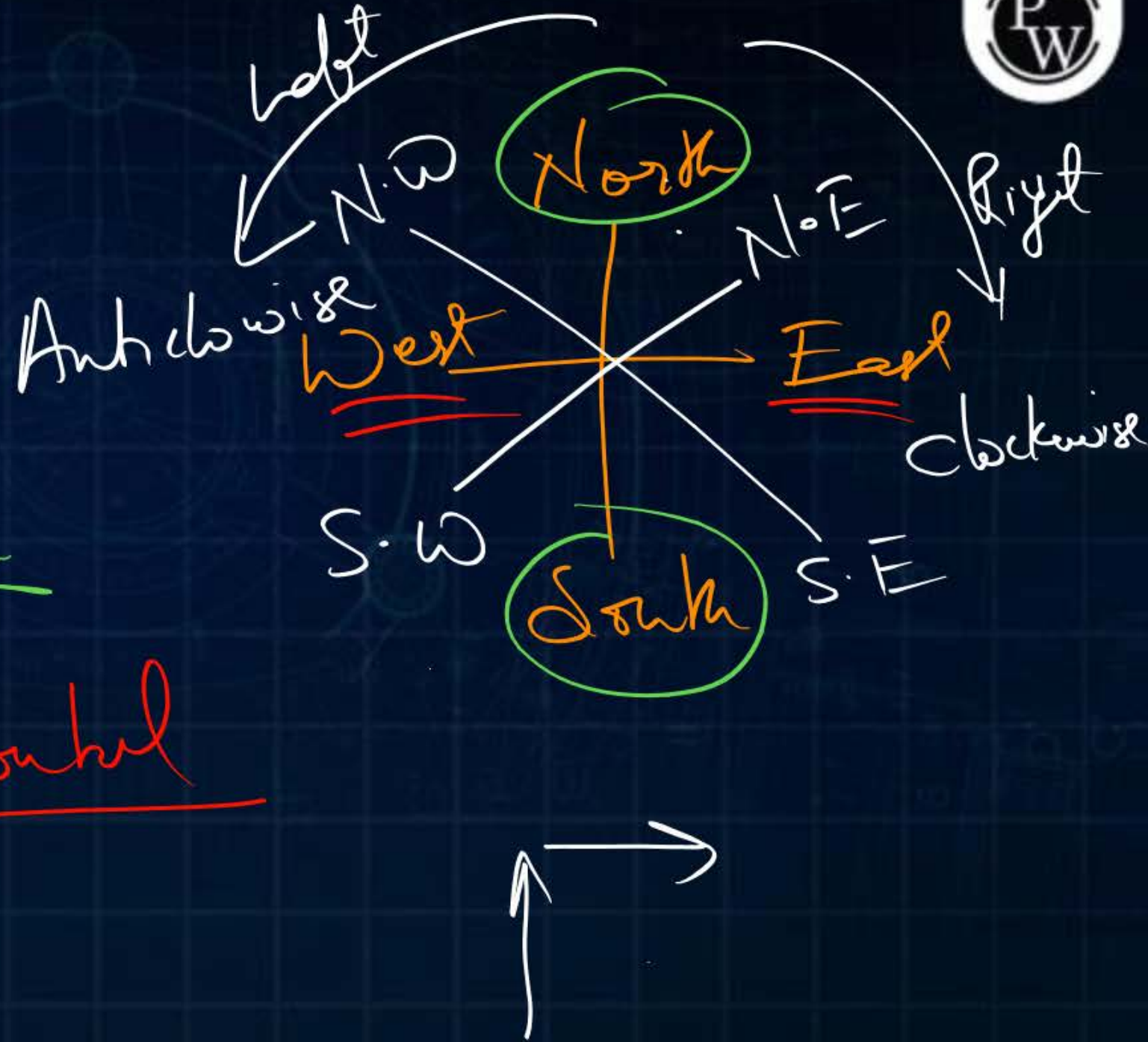
DIRECTIONS



90°

Verticle

Horizontal



East 45 1. Horizontal Distance (Replacement)

0 2. Vertical Distance

3 North The direction facing at last
East 4 In which direction as compared to origin
 5.

How far from origin

$$= \sqrt{H^2 + V^2} = \sqrt{(45)^2 + 0^2}$$

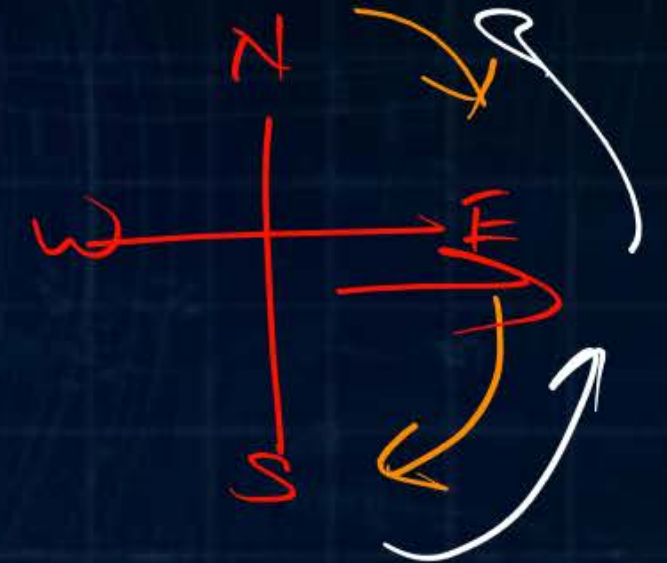
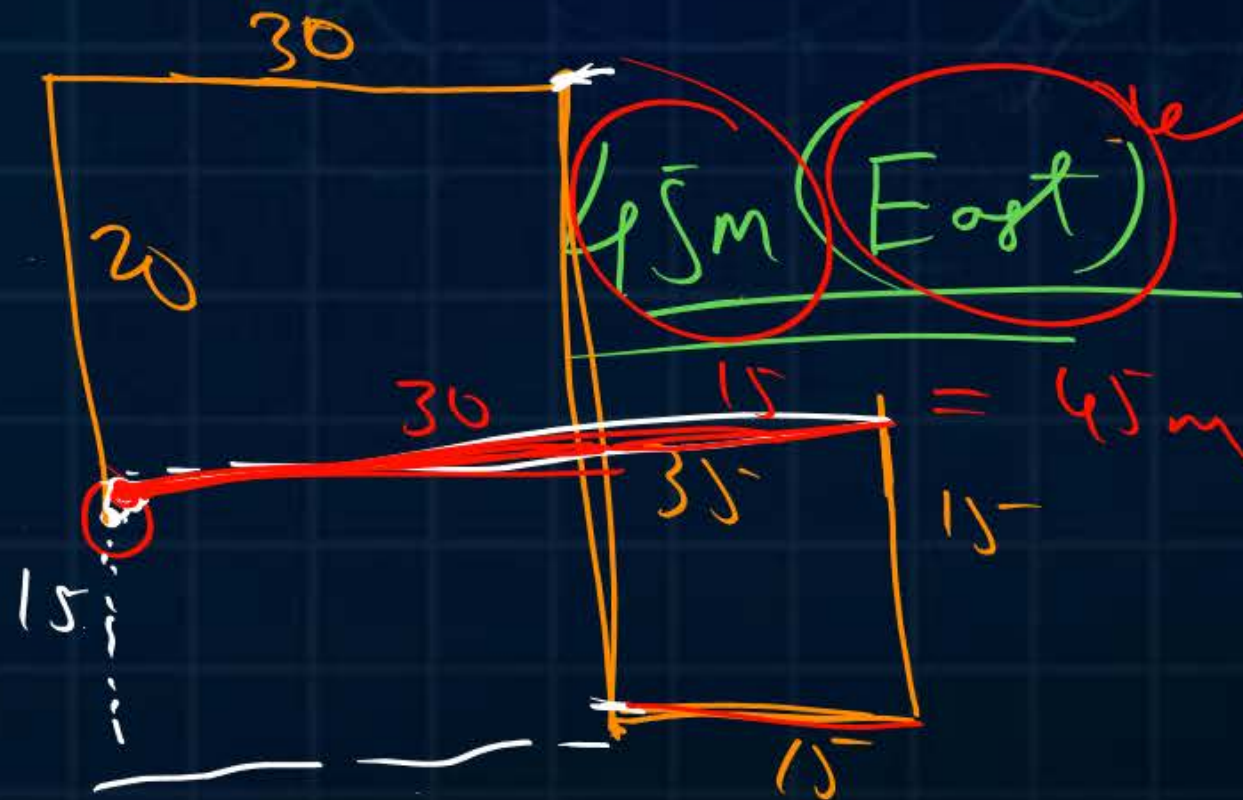
$$= \sqrt{45^2} = \underline{\underline{45m}}$$

Question

Varun walks 20 m North, then he turns right and walks 30 m, then he turns right and walks 35 m, then he turns left and walks 15 m. Then he again turns left and walks 15 m. In which direction and how many metres away is he from his original position?

- A** 15 metres West
- B** 30 metres East
- C** 45 metres East
- D** 30 metres West

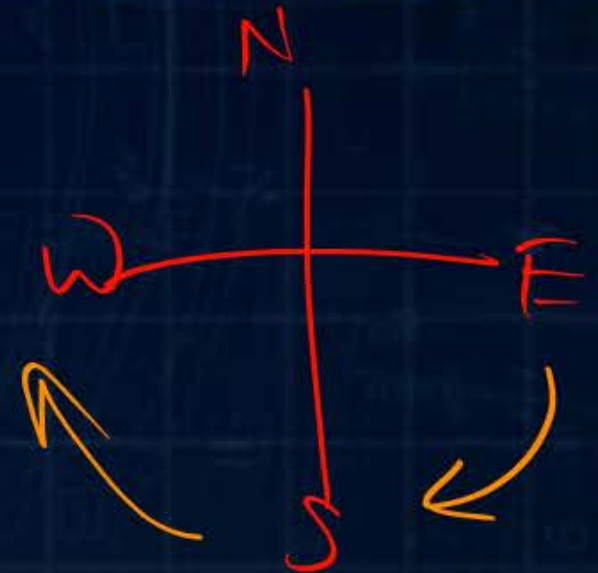
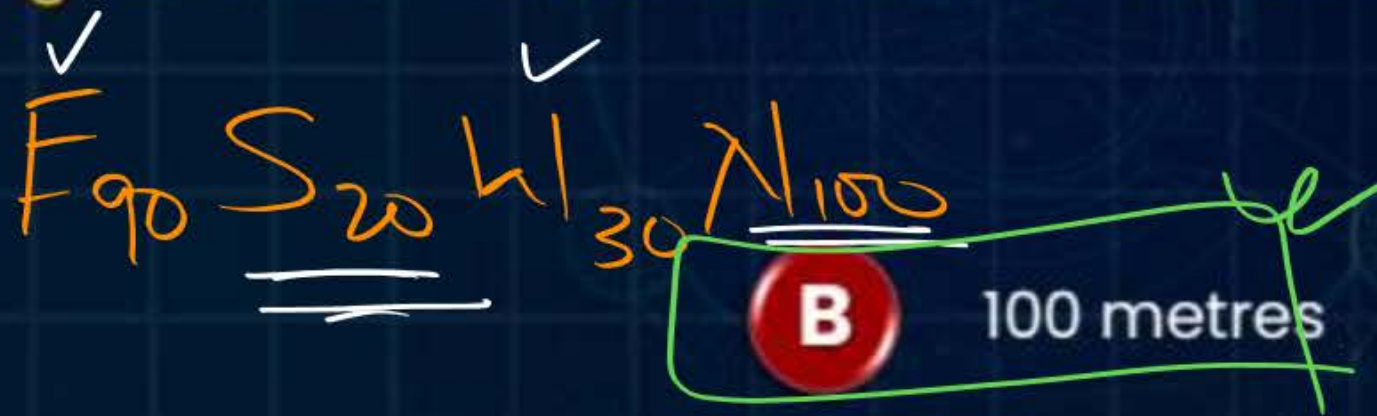
N₂₀ E₃₀ S₃₅ E₁₅ N₁₅



Question



A Child is looking for his father. He went 90 metres in the east before turning to his right. He went 20 metres before turning to his right again to look for his father at his uncle's place 30 metres from this point. His father was not there. From there, he went 100 metres to his north before meeting his father in a street. How far did the son meet his father from starting point?



A 180 metres

C 140 metres

H \Rightarrow 60 (East)

V \Rightarrow 80 (North)

100m

D 120 metres

$$\sqrt{60^2 + 80^2} = \sqrt{3600 + 6400}$$

$$= \sqrt{10000}$$

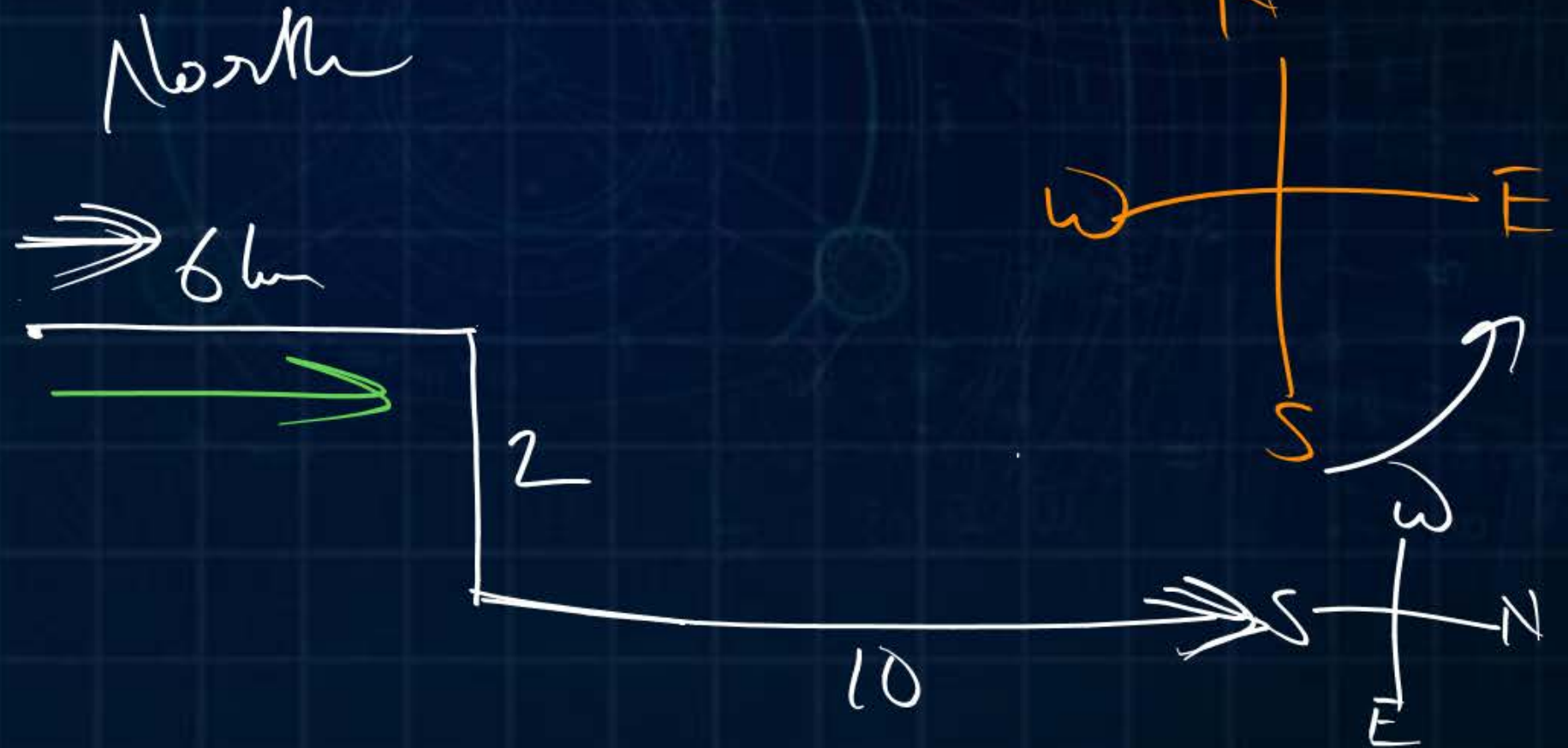
$$\sqrt{H^2 + V^2}$$

Question



After walking 6 km, I turned ~~right~~ and covered a distance of 2 km, then turned ~~left~~ and covered a distance of 10 km. In the end, I was moving towards the North. From which direction did I start my journey?

- A** West
- B** South
- C** East
- D** North



Question



Facing towards north, Goel walks 20 meters, he turns left and walks 40 meters, he again turns left and walks 20 meters, then he turns right and walks 20 meters. How far is he now from his original position?

A 30 m

C 45 m

~~N₂₀~~ W₄₀ ~~S₂₀~~ E₂₀

B 40 m

H \rightarrow 60 (west)

V \rightarrow 0

$$= \sqrt{60^2} = \underline{60\text{m}}$$

$$\sqrt{H^2 + V^2}$$

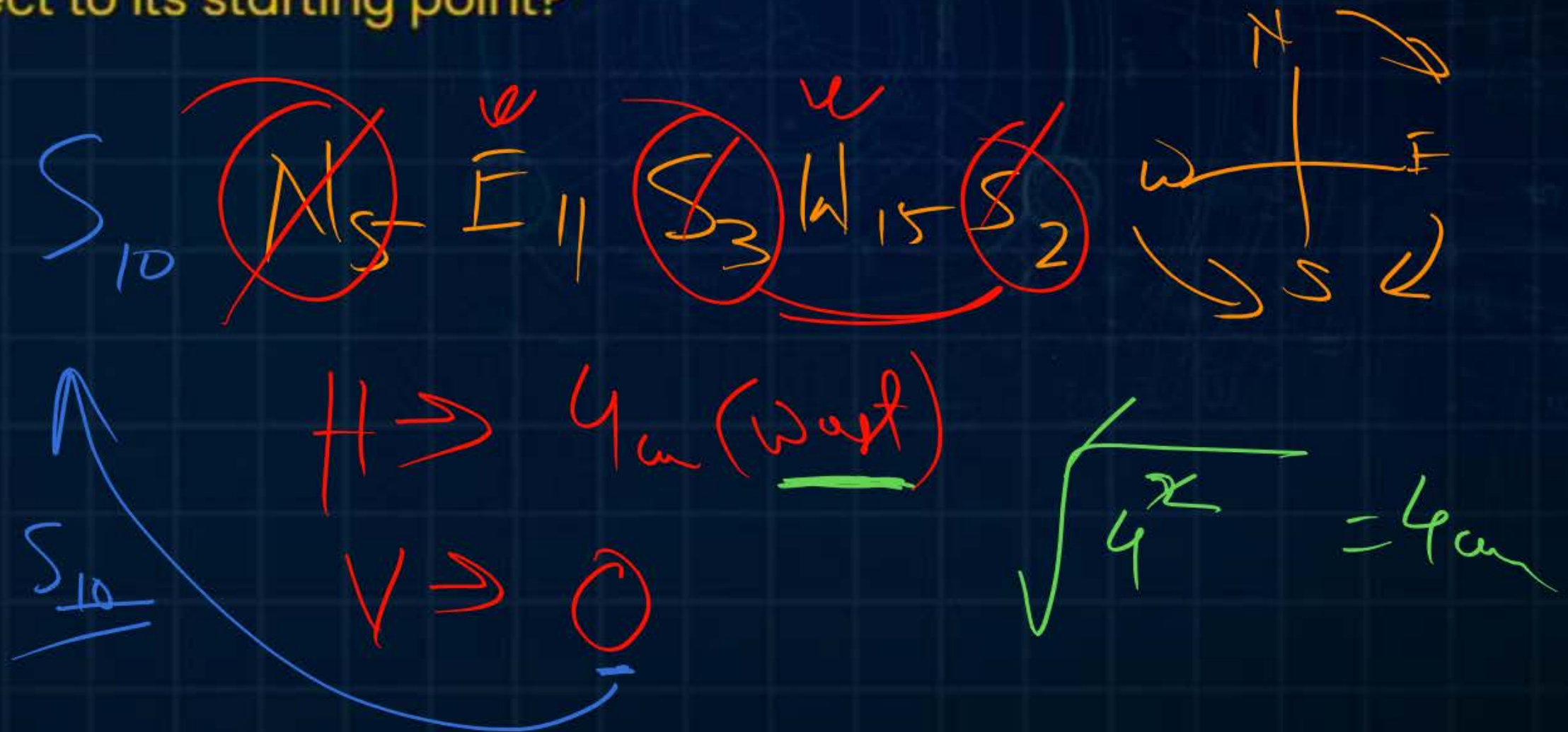


Question



A scientist is studying the behaviour of an ant. The ant picks food and walks 5 cm North, then it turns to its right and walks for another 11 cm. then it turns right and walks 3 cm, then it turns West and walks 15 cm, then finally it turns to its left and walks 2 cm. Where is the ant now with respect to its starting point?

- A** 4 cm East
- B** 26 cm West
- C** 4 cm West
- D** 26 cm East





CODING DECODING



$$\begin{array}{r} 27^{\text{th}} - 20 \\ - 9 \\ \hline 18^{\text{th}} \end{array}$$

1
A
26
9
T
18

13 14
M N
14 13

26
Z
1
20
T
7th

Question



In a certain code language CENTRAL is written as LARTNEC. How will SEMINAR be written in that code language?

RANIMES

A NARIMES

B MESIRAN

C NARISEM

D RANIMES

Question



In a certain code language INACTIVE is written as VITCANIE. How will COMPUTER be written in that code language?

ETUPMOCR

A

UTEPMOCR

C

ETUPMOCR

B

PMOCRETU

D

MOCPETUR

Question



If VAIN is written as WBJO. Which word is written as UPOF?

A TONE

B TOMB

C ROSE

D ROPE

(+1)
VAIN → W BJO
TONE ← ⁽⁺¹⁾ UPOF

word?

Question



If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473. What will be the code for SEARCH?

A 216473

C 246173

B 214637

D 214673

SEARCH

→ 214673

Question



If HID is written as B4C3B2. How will URN be written as?

7x3
3x7

- A** C7B9B7
- B** C3B9B7
- C** C7B9B5
- D** B9C3C7

$\begin{matrix} 8 & & 4 \\ \text{H} & \text{I} & \text{D} \end{matrix} \rightarrow \begin{matrix} 2 \times 4 \\ \text{B} & 4 & \text{C} & 3 & \text{B} & 2 \\ & 3 \times 3 & & 2 \times 2 \end{matrix}$

$\begin{matrix} 9 \\ \text{U} & \text{R} & \text{N} \end{matrix} \rightarrow \begin{matrix} 21 & 18 & 14 \end{matrix}$

Question



If pen is called pencil, pencil is called scale, scale is called bag and bag is called book, which is used to carry the books?

A scale

B pen

C book

D bag

word

Code

A is called

N

Code

word

A means

T

Question



In a certain code language "123" means "hot filter coffee", "356" means "very hot day" and "589" means "day and night". Which digit in that language means "very"?

hot \rightarrow 3

Day \rightarrow 5

A 8

B 6

C 9

D 5

Code

123 \rightarrow hot filter coffee

3 5 6 \rightarrow very hot day

5 8 9 \rightarrow day and night

Question



In a certain code "il be pee" means "roses are blue", "sik hee" means "red flowers" and "pee mi hee" means "flowers are vegetables".
How is "vegetables are red flowers" written in this code?

- A** sik pee hee be
- B** il sik mi hee
- C** pee sik mi hee
- D** Can't be determined

il be pee → Roses are blue
sik hee → Red flower
pee mi hee → flowers are vegetables
sik Red

Question (PYQ GATE Exam 2021 ME)



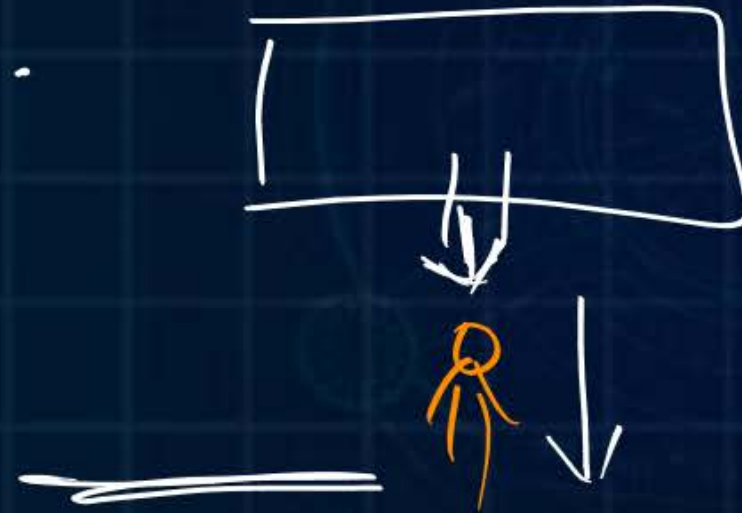
Ms. X came out of a building through its front door to find her shadow due to the morning sun falling to her right side with the building to her back. From this, it can be inferred that the building is facing

A North

B East

C West

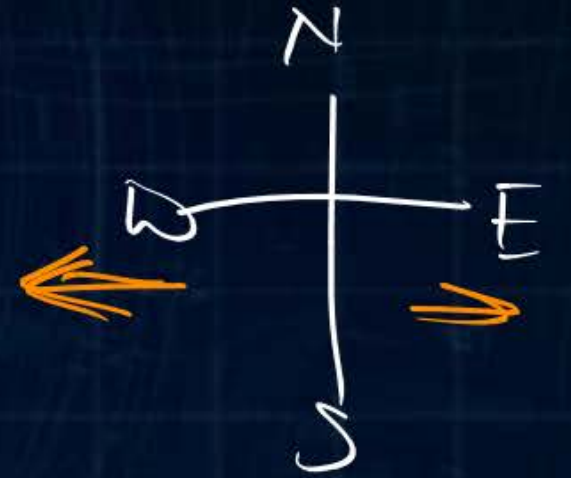
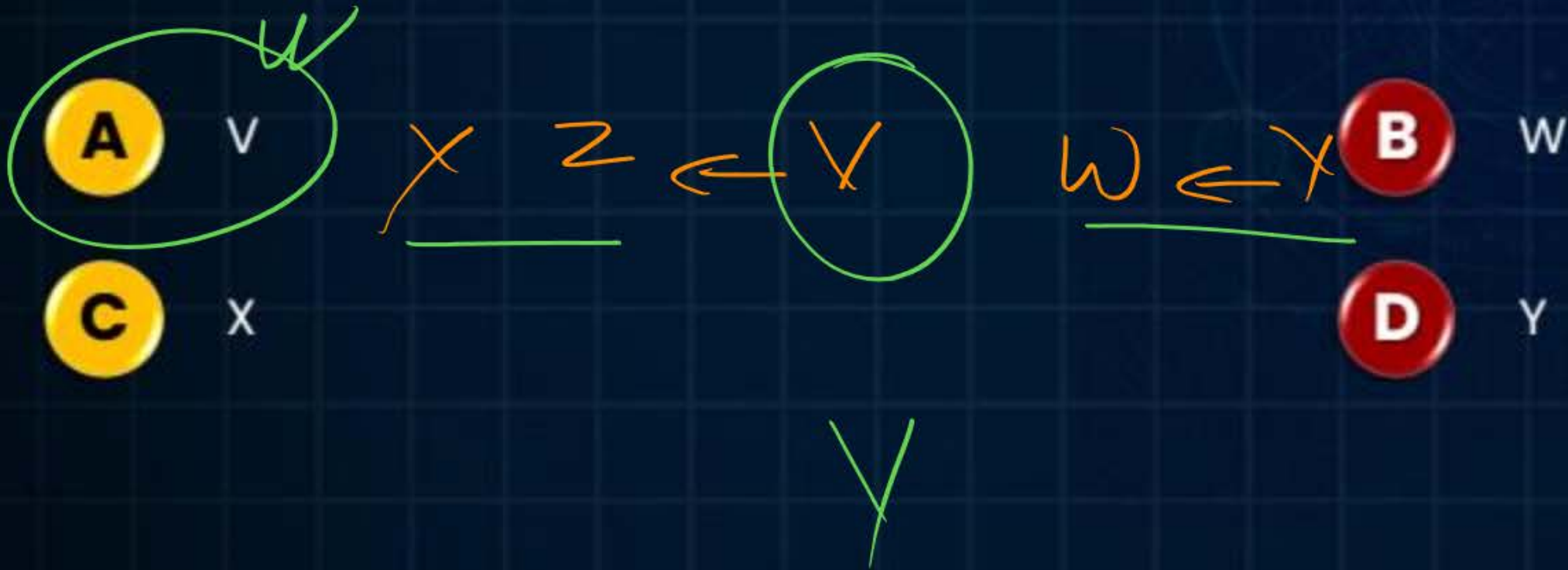
D South



Question (PYQ GATE Exam 2017 EE)



There are five buildings called V, W, X, Y and Z in a row (not necessarily in that order). V is to the West of W. Z is to the east of X and the West of V. W is to the west of Y. Which building is in the middle?



Question (PYQ GATE Exam 2016 EC)

If 'relftaga' means carefree, 'otaga' means careful and 'fertaga' means careless, which of the following could mean 'aftercare'?

A zentaga

C tagazen

taga

~~**B**~~ tagafer

D relffer

Question (PYQ GATE Exam 2014 EC)



If 'KCLFTSB' stands for 'best of luck' and 'SHSWDG' stands for 'good wishes', which of the following indicates 'ace the exam'?

A MCHTX

B MXHTC

C XMHCT

D XMHTC

best of luck → Best
of Luck

good wishes → Good Wishes

ace the exam → CT SHSWDG
HXM

→ MXHTC

Question (PYQ GATE Exam 2020 CE)



If 0, 1, 2,7, 8, 9 are coded as O, P, Q,V, W, X, then 45 will be coded as _____

A TS

C SS

ST

B ST

D SU

0	→	O
1	→	P
2	→	Q
3	→	R
4	→	S
5	→	T
6	→	U
7	→	V
8	→	W
9	→	X

Question (PYQ GATE Exam 2019 CE)



If E = 10; J = 20; O = 30; and T = 40, what will be $P + E + S + T$?

A 51

B 82

C 120

D 164

$$32 + 10 + 38 + 40 = 120$$

$$\begin{array}{l} \text{E} \rightarrow 5 \times 2 = 10 \\ \text{J} \rightarrow 10 \times 2 = 20 \end{array}$$

$$\text{O} \rightarrow 15 \times 2 = 30$$

$$\text{T} \rightarrow 20 \times 2 = 40$$

$$\text{P} \rightarrow 16 \times 2 = 32$$

$$\text{S} \rightarrow 19 \times 2 = 38$$

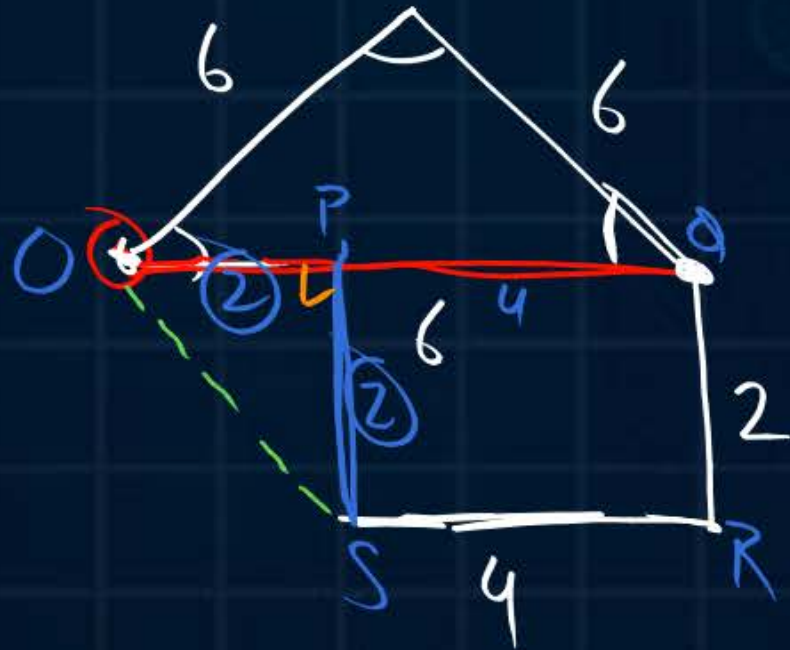
Question (PYQ GATE Exam 2015 CE)



Mr. Vivek walks 6 meters North-east, then turns and walks 6 m South-east, both at 60 degrees to east. He further moves 2 meters South and 4 meters West. What is the straight distance in meters between the point he started from and the point he finally reached?

A $2\sqrt{2}$

C 2



B $\sqrt{2}$

D $1\sqrt{2}$



$$OS^2 = 2^2 + 2^2$$

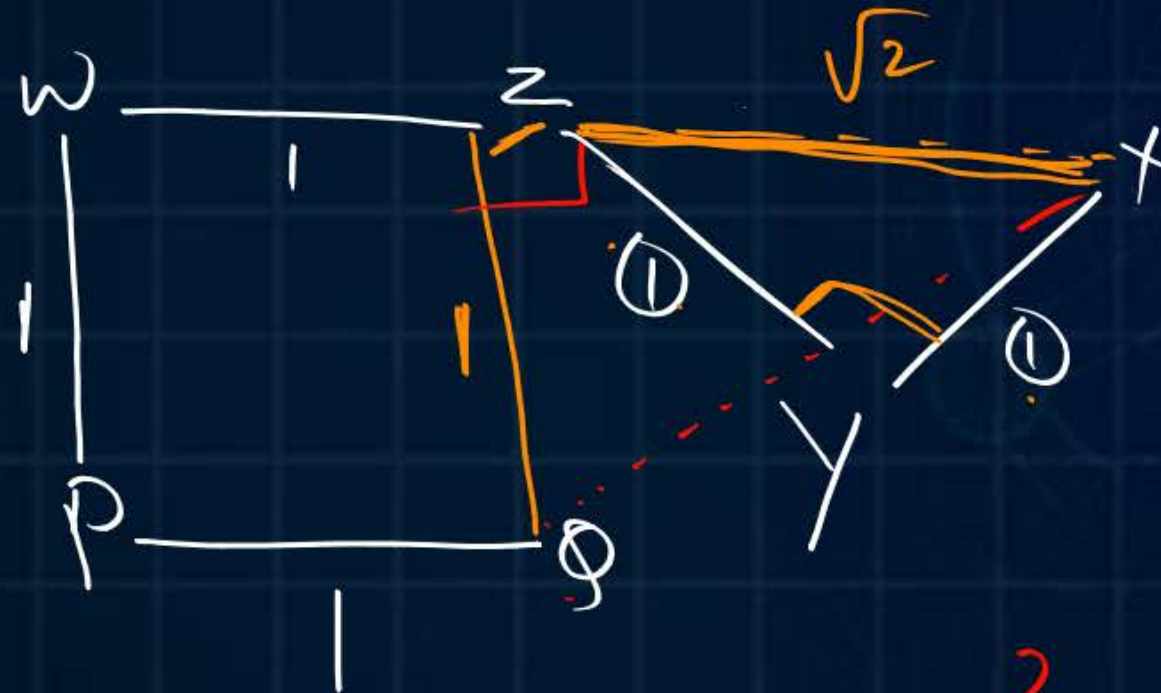
$$OS = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2}$$

Question (PYQ GATE Exam 2014 CE)



X is 1 km northeast of Y. Y is 1 km southeast of Z. W is 1 km west of Z. P is 1 km south of W. Q is 1 km east of P. What is the distance between X and Q in km?

$$ZX = \sqrt{1+1} = \sqrt{2}$$



- A** 1
- B** $\sqrt{2}$
- C** $\sqrt{3}$
- D** 2

$$\begin{aligned} QX^2 &= (\sqrt{2})^2 + 1^2 \\ QX^2 &= 2 + 1 \\ QX &= \sqrt{3} \end{aligned}$$

Question (PYQ GATE Exam 2021 ME)



The front door of Mr. X's house faces East. Mr. X leaves the house, walking 50 m straight from the back door that is situated directly opposite to the front door. He then turn to his right, walks for another 50 m and stops. The direction of the point Mr. X is now located at with respect to the starting point is

A South-East

C West



B North-East

D North-West

Handwritten notes: "1st 50 N 50" with a green circle around the 'H' and a green circle around the 'Y'.



North West

Question (PYQ GATE Exam 2020 CS)



If values of $P = 3$, $R = 27$, $T = 243$, then $Q + S =$ -----

A 40

B 80

C 90

D 110

$$\begin{aligned} P &= 3 = 3^1 \\ Q &\Rightarrow 3^2 = 9 \\ R &= 27 = 3^3 \\ S &\Rightarrow 3^4 = 81 \\ T &= 243 = 3^5 \end{aligned}$$

$$Q + S = 9 + 81 = \underline{\underline{90}}$$

Question (PYQ GATE Exam 2020 ME)

P, Q, R and S are to be uniquely coded using α and β . If P is coded as $\alpha\alpha$ and Q as $\alpha\beta$, then R and S, respectively, can be coded as

$\alpha\alpha \rightarrow P$

$\alpha\beta \rightarrow Q$

$\beta\beta$

$\beta\alpha$

B $\beta\beta$ and $\alpha\alpha$

D $\beta\alpha$ and $\beta\beta$

A $\beta\alpha$ and $\alpha\beta$

C $\alpha\beta$ and $\beta\beta$

Question (PYQ GATE Exam 2019 ME)

If IMHO = JNIP; IDK = JEL; and SO = TP, then IDC = -----

A JDE

B JED

C JDC

D JCD

(+1)

IMHO = JNIP

IDK = JEL

SO = TP

IDC \Rightarrow JED

Question (PYQ GATE Exam 2018 EE)

In a certain code, ^{1 13}AMCF is written as ^{5 17}EQGJ and NKUF is written as ROYJ. How will DHLP be written in that code?

A RSTN

C HLPT

B TLPH

D XSVR

(+4)

DHLP



HLPT



Summary

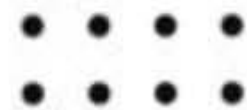


Directions

Coding Decoding

The word 'Thank' is written in a large, yellow, cursive script. A yellow arrow starts from the top of the 'T', extends horizontally to the right, and then curves downwards to point at the end of the word.

THANK



Keep Hustling!