

FIA

Federal Investigation Agency



FIA CSS PMS PPSC FPSC ONE PAPER

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COMPUTER MCQS RANDOM

- A single point on Computer screen \rightarrow pixel
- First Generation Computer \rightarrow (1940-1956) No. 159
- Second Generation Computer \rightarrow (1956-1963)
- Third Generation Computer \rightarrow (1964-1971)
- Fourth Generation Computers \rightarrow (1972-2010)
- First Generation used \rightarrow Vacuum Tubes (For circuitry)
- First Generation used \rightarrow Magnetic drums (For memory)
- 2nd Gen-used For circuitry \rightarrow Transistors
- 3rd Generation used For circuitry \rightarrow Integrated circuit
- 4th Generation used For circuitry \rightarrow Microprocessor
- Super computer invented by \rightarrow VAN Tassel
- Internet is \rightarrow Computer Based DATA BANK
- Old NAME OF IBM before 1924 \rightarrow Computer Tabulating & Recording Company
- Single worksheet contains \rightarrow 16384 characters
- First Truly ELECTRONIC Computer \rightarrow ENIAC
- Who created WWW \rightarrow Tim Berners-Lee
(WASIMAK)
- Combination of Analogue & Digital \rightarrow Hybrid Computers
- Input For a Compiler \rightarrow Source Program.
- BASIC STANDS FOR \rightarrow Beginner's All purpose Symbolic Instruction
- output OF a Compiler is \rightarrow Object Code.
- Computer Buses are \rightarrow Address, DATA, CONTROL
- Software Enhancement of single package \rightarrow Vertical Integration
- SOFTWARE Behaves Like TRAFFIC police \rightarrow Operating System
- WORM STANDS FOR "Write once Read Many"
- JAVA written programmes affected by \rightarrow STRANGE BREW virus
- An Algorithm is \rightarrow Generic Type.
- FASTER AND SMALLER MEMORY \rightarrow Cache

- Given all that outcomes are equally likely, one can find probability of an event "E" using

$$P[E] = \frac{\text{Number of outcomes corresponding to event E}}{\text{Total number of equally-likely outcomes}}$$

Furthermore: (Example):

IF we roll a 6-sided die,
calculate:

- 1) $P(\text{rolling a } 1)$
- 2) $P(\text{rolling a number bigger than } 4)$

Solution:

sample space = $(1, 2, 3, 4, 5, 6)$

- 1) There is one outcome corresponding to "rolling a 1", so probability is $\boxed{\frac{1}{6}}$

- 2) There are two outcomes bigger than a 4, so the probability is $\frac{2}{6} = \boxed{\frac{1}{3}}$

Instagram \rightarrow myself-wasimak

• PREPOSITIONS 2

- Room For
- Example of
- visit To
- Connection with
- Check For
- Belief in
- Concern with
- Cause of
- access To
- Quarrel with
- Reference To
- participation in
- Experiences in
- Resistance To
- discipline in
- Fall in
- cure For
- Solution To
- Growth in
- Change in
- Delay in
- sympathy with
- Difference in
- Exhibition of
- place in
- Reason To
- Depend on
- Count on
- Think about
- Choose From
- In a list
- on the right
- In a box
- In the picture
- on a bicycle
- on the rug
- on the wall
- ON the cover

square root of a number "x" is denoted with a radical sign " $\sqrt{\quad}$ ".

say " \sqrt{x} ".

Also:

$$\sqrt{\quad} = \frac{1}{2}$$

So,

$$\boxed{\sqrt{x} = (x)^{\frac{1}{2}}}$$

Examples:

• $\sqrt{1} = 1 = 1^{\frac{1}{2}}$

underroot / square root of 1 is 1.

i.e. $\boxed{\sqrt{1} = 1}$

• $\sqrt{4} = 2$

• $\sqrt{16} = 4$

• $\sqrt{25} = 5$

• $\sqrt{81} = 9$

AND SO ON,

• PREPOSITIONS :

- AT Home
- AT work
- AT University
- AT College
- AT school
- AT the bus stop
- AT the exit
- ON the way
- ON Television
- ON a horse
- IN Paris
- IN the world
- ON the second floor
- ON an elephant
- IN a car
- IN the Bathroom
- IN the kitchen
- AT Reception
- under a tree
- under the table
- under the chair
- under a bridge
- Credit For
- Interest in
- Contact with
- hatred For
- Success in
- advantage of
- photograph of
- Recipe For
- Reaction To
- Talent For
- Love For
- Search For
- Argument with
- difficulty in
- Fondness For
- Reason For
- Desire To
- Date with
- way of
- meeting with

<u>Common NAME</u>	<u>CHEMICAL NAME</u>
1) Sand →	silicon oxide
2) sugar →	sucrose
3) Dry ICE →	Solid carbon dioxide
4) Gypsum →	Calcium sulphate
5) Rock salt →	Sodium chloride
6) vinegar →	Acetic Acid
7) Baking powder →	Sodium Bicarbonate
8) Marsh Gas →	Methane

WALIMAN NOTES

INSTRUMENTS: (AND THEIR USE)

- 1) GALVANOMETER → Small Electric Current
- 2) LACTOMETER → Purity of Milk
- 3) RADJOMETER → Emission of Radiant Energy.
- 4) ANEMOMETER → Velocity of wind
- 5) Ammeter → Current
- 6) Barometer → Atmospheric Pressure
- 7) Hydrometer → Relative Density liquids
- 8) Micrometer → Minute Distances
- 9) spectrometer → spectrum of light
- 10) viscometer → viscosity of liquids
- 11) Thermometer → Temperature

9) PERSONS ACT 2018

"To prevent and combat trafficking in persons especially women & children" -

WASIM AK NOTES

- Sect-1 → Title, extent and commencement.
 - Sect-2 → Definitions.
 - Sect-3 → Trafficking in persons.
 - Sect-4 → Aggravating Circumstances
 - Sect-5 → Abetment & Criminal Conspiracy
 - Sect-6 → Victims of Trafficking
 - Sect-7 → presumption in child victim case
 - Sect-8 → Investigating Agency
 - Sect-9 → Cognizance
 - Sect-10 → Cognizance of offences
 - Sect-15 → Power to make Rules
 - Sect-16 → Repeal.
-

GENERAL SCIENCE

• Elements IN ATMOSPHERE:

- 1) Nitrogen → 78 %
- 2) Oxygen → 21 % (Approx)
- 3) Argon → 1 % (Approx)
- 4) other gases → 0.03 %

• DISEASE AND EFFECT:

- 1) Typhoid → Intestines
- 2) Asthama → Bronchial muscles
- 3) Jaundice → Liver (WASSIMAK NOTES)
- 4) Glaucoma → Eyes
- 5) Diphtheria → Throat
- 6) Polio → Legs
- 7) Paralysis → Nerves
- 8) Eczema → skin
- 9) Malaria → spleen
- 10) Arthritis → Joints
- 11) Cataract → Eyes
- 12) Goitre → Thyroid Gland
- 13) Meningitis → Brain and spinal cord.
- 14) Pyorrhoea → Teeth & Gums

COMPUTER BASICS

1) MS EXCEL:

- Help key in Excel \rightarrow F1
- Edit key in MS Excel \rightarrow F2
- To repeat last Action \rightarrow F4
- "GoTo" Tab \rightarrow F5
- "Print dialogue Box" in excel \rightarrow Ctrl+P
- To underline Text \rightarrow Ctrl+U
- To Copy Text \rightarrow Ctrl+C
- To paste Text \rightarrow Ctrl+V
- To cut Text in MS excel \rightarrow Ctrl+X
- For "Redo" \rightarrow Ctrl+Y (WASIMAKNOTES)
- To open new work Book \rightarrow Ctrl+N
- To insert current DATE \rightarrow Ctrl+:
- To Bold Text \rightarrow Ctrl+B
- To Replace Text \rightarrow Ctrl+H
- To minimise work Book \rightarrow Ctrl+F4
- To apply General Number Formula \rightarrow Ctrl+Shift+~ (WASIMAK)
- To select an entire column \rightarrow click column heading letter
- Comments put in cell are called \rightarrow Cell Tip
- To apply outline Border \rightarrow Ctrl+Shift+F7
- To delete one character \rightarrow Backspace
- To insert a new worksheet \rightarrow Alt+Shift+F1
- To open visual Basic editor \rightarrow Alt+F11

- Father of Computer → Charles Babbage
- Special purpose Computer → ABC
- URL → Address of a webpage.
- Brain of Computer → CPU
- Cookie → Internet Information File.
- ".bak" Extension For → Backup File.
- Cathode ray Tube Found in → Monitor
- Computer Mouse → Input Device.
- Keyboard → Input Device.
- Monitor → output device.
- Speaker → output Device.
- Printer → output device.
- WAN → Wide Area Network.
- Both input & output device → Modem.
- Bug → An error. (WASIM AK)
- BIOS → BASIC Input output System.
- FORTRAN → Formula Translation.
- FORTRAN → A Computer Language.
- Machine independent Computer language → High level.
- Bit stands for → Binary Digit.
- Webcam is input device.
- Resolution → Dot per inch
- "Garbage in Garbage out" Related To → Accuracy.
- SPEC → system performance Evaluation Corporation
- A set of instructions → SOFTWARE
- ".TMP" → Temporary File
- Unix was developed by → Bell Laboratories.
- Founding Father Google → Larry page & Sergey Brin
- UNIVAC → Universal Automatic Computer
- EBCDIC → Extended Binary Coded Decimal Interchange Code - (BI)

- 8 bits = 1 byte
- 1024 bytes = 1 kb
- 1024 KB = 1 GB
- 1024 GB = 1 TB (TeraByte).
- Device connects multiple nodes → A Hub
- An address bus is → unidirectional
- 1 nibble contains → 4 bits
- MICR → Magnetic Ink character Reader.
- OA → OFFICIAL Automation.
- Electronic Banking also called → Cyber Banking
- Famous virus is → Friday 13
- FAST → Federation Against Software Theft
- Assembly Language → Low level language.
- Combination of 16 bits → word
- Unit Control All parts of PC → Control unit (CU)
- Google → An internet search engine.
- People use more internet → china
- Largest search engine → Google
- Country having more computers → USA
- Biggest company of computer → IBM
- ROM → Read only Memory - (WASIMAK)
- RAM → Random Access Memory
- CPU → Central processing unit
- Four nibbles = 2 bytes
- Smallest Memory unit → Bit
- SMTP → Simple Mail Transfer Protocol
- FTP → File Transfer Protocol.

• DEFICIENCY & DISEASE

- 1) Vitamin A → Night Blindness
- 2) Vitamin B₁ → Beri-Beri
- 3) Vitamin B₂ → Ariboflavinosis
- 4) Vitamin C → Scurvy
- 5) Vitamin D → Rickets (children)
→ Osteomalacia (adults)
- 6) Iodine → Goitre
- 7) Sodium → Hyponatremia
- 8) Potassium → Hypokalemia

• BRANCHES OF SCIENCE

- 1) Cardiology → Study of Heart
- 2) Geology → Study of Earth
- 3) Neurology → Study of Nervous system
- 4) Taxonomy → Study of classification organism
- 5) Pedology → Study of soils
- 6) Philology → Study of language
- 7) Osteology → Study of Bones
- 8) Hepatology → Study of liver
- 9) Entomology → Study of insects
- 10) Anthology → Study of Flowers
- 11) Dermatology → Study of skin.
- 12) Myology → Study of muscles.

10) Area of Rectangle:

$$\text{Area} = \text{length} \times \text{width}$$

* Example: length = 5, width = 2

$$a = 5 \times 2$$

$$\boxed{a = 10} \text{ Answer}$$

11) Area of parallelogram? (WASIMAK)

$$\text{area} = \text{base} \times \text{height}$$

* example: Base = 5, height = 6

$$\text{Area} = \text{base} \times \text{height}$$

$$= 5 \times 6$$

$$\boxed{= 30} \text{ ANS:}$$

12) Area of Circle:

$$A = \pi r^2$$

* Example: $r = 4$, $\pi = 3.14$ ($\frac{22}{7}$)

$$a = \pi \times 4^2$$

$$= \pi \times 16$$

$$\boxed{A = 50.24} \text{ ANS}$$

② MS POWERPOINT

- To open presentation → $Ctrl + O$
- To create new presentation → $Ctrl + N$
- To save a presentation → $Ctrl + S$
- To print a presentation → $Ctrl + P$
- To close a presentation → $Ctrl + W$
- To insert a new slide → $Ctrl + M$
- For help in pp → $F1$ (pp → powerpoint presentation)
- To cut Text → $Ctrl + X$
- To undo in pp → $Ctrl + Z$
- To copy in pp → $Ctrl + C$
- To paste in pp → $Ctrl + V$
- To Repeat/Redo → $Ctrl + Y$
- To Find in pp → $Ctrl + F$
- To select all in pp → $Ctrl + A$ (WASIMAK)
- To goto next slide → Next key
- To goto previous slide → Back key
- To begin the slide show → $Shift + F5$
- To End slideshow → ESC
- To left Align Text → $Ctrl + L$
- To center Align → $Ctrl + E$
- To JUSTIFY Text in pp → $Ctrl + J$
- which isn't part of slide design → slide layout

BASIC MATHS

1) PERCENTAGE:

A percentage is a Fraction whose denominator (bottom) is 100.

So if we say 50%, we mean $\frac{50}{100} = \frac{1}{2}$, (after cancelling). So 50% means $\frac{1}{2}$.

EXAMPLE:

10% of something = ? (say 10% of 150)

$$\boxed{10\% \text{ of } 150} = \frac{10}{100} \times 150$$

$$= \frac{1}{10} \times 150$$

$$= 1 \times 15 = \boxed{15}$$

(WAIMAKNOTES)

2) percentage changed:

- The price of some oranges is increased from 48p to 67p. By how much percent has the price increased?

Solution:

Formula: $\% \text{ change} = \frac{\text{new value} - \text{original value}}{\text{original value}} \times 100$

MEDIAN: "

Middle point of data set is called median. "

→ To Find Median:

- Arrange data points smallest to largest
- IF number of data points is odd, the middle data point is median.
- IF the number of data point is even, median is average of two middle data points.

A) Odd CASE Median:

• Find median of 1, 4, 2, 5, 0 ?

Solution:

→ put data in order: Wasim Ak

$$= 0, 1, 2, 4, 5$$

= median is $\boxed{2}$ Ans

B) EVEN CASE:

• Find Median of 20, 30, 50, 60 ?

Solution:

→ put data in order = $20, 30, 50, 60$

$$\text{median} = \frac{30+50}{2} = \frac{80}{2} = \boxed{40} \text{ Ans}$$

$$\% \text{ Change} = \frac{67-48}{48} \times 100 = \boxed{39.58\%}$$

• DECIMALS AND FRACTIONS:

Fractions in which denominators are powers of 10 ARE CALLED decimal fractions.

$$\rightarrow \frac{1}{10} = 1 \text{ tenth} = 0.1$$

$$\rightarrow \frac{1}{100} = 1 \text{ hundredth} = 0.01$$

$$\rightarrow \frac{88}{100} = 88 \text{ hundredths} = 88 \text{ hundredths} = 0.88$$

$$\rightarrow \frac{9}{1000} = 9 \text{ thousandths} = 0.009$$

• AVERAGE (MEAN):

Sum of data points is divided with total number of data points.

• Example:

Find mean of 2, 4, 5, 6 = ?

• Solution:

$$\text{mean} = \frac{\text{sum of data points}}{\text{Total number of data points}}$$

$$= \frac{2+4+5+6}{4} = \frac{17}{4} = 4.25$$

ENGLISH VOCABULARY

دیکشنری کے لیے علیحدہ کتاب
 لیسٹ آف انگریزی لہجے - ہمارے لیے مفید ہے

- Amusement → تفریح
- Addition → اضافہ
- Agreement → معاہدہ
- Accurate → صحیح
- Abandon → چھوڑ دینا
- Assemble → جمع کرنا
- Blunt → عمدہ چھٹ
- Belief → ایمان
- Bond → تعلق
- Bankrupt → دیوالیہ
- Bona Fide → بحال دوست
- Conclusion → نتیجہ
- Conceal → چھپانا
- Comrade → دوست
- Compassion → رخصتی
- Death → مہی
- Deduce → نتیجہ اخذ کرنا
- Discriminate → فرق کرنا
- Disdain → سخت نوت
- Extol → تعریف کرنا
- Emerge → ظاہر ہونا
- Elicit → ابھارنا
- Elaborate → وضاحت
- Fuss → جھگڑا
- Felony → سنگین جرم

- Fierce → شدید
- Fraternity → بھائی بھائی
- Furry → غصہ
- Gait → چلنے کا انداز
- Gallant → بہادر
- Gamble → جو کھیلنا
- Garnish → سجاوا
- Gaze → نگاہ
- Gigantic → بہت بڑا
- Guise → پردہ پھیلانا
- Haggle → جھگڑا کرنا
- Halt → رکاوٹ
- Haphazard → اتفاقی
- Heinous → فکروہ
- Heresy → افواہ
- Infidel → کافر
- Inflammable → آتش گیر
- Inflation → قیمت بڑھانی
- Ignite → جھولنا
- Illicit → غیر قانونی
- Illusion → دھم
- Jubilant → بے حسرت
- Jinx → بری قسمت

8) ELECTRONIC CRIME ACT 2016

" To prevent unauthorized acts with respect to information systems and provide for related offenses as well as mechanisms for their investigation, prosecution, trial etc "

WASIM AH NOTES

- Sect-1 → Title, extent, Application, Commencement
- Sect-2 → Definition
- Sect-3 → Unauthorized access To data.
- Sect-4 → Unauthorized copying
- Sect-5 deals → Interference
- Sect-6 → Critical infrastructure
- Sect-9 → Glorification of an offence
- Sect 10A → Hate speech
- Sect 10 → Cyber Terrorism
- Sect 11 → Electronic Forgery
- Sect 12 → Electronic Fraud
- Sect 15 → Unauthorized issuance SIM.
- Sect 17 → Unauthorized interception
- Sect 19A → Child pornography
- Sect 20 → Malicious code.
- Sect 21 → Cyber stalking
- Sect 22 → Spamming

(12)

• MODE:

"The mode is most commonly occurring datapoint in a dataset."

• Example:

• Find MODE OF 1, 1, 0, 0, 2, 2, 2, 2, 3, 3 ?

SOLUTION:

→ "2" is occurring more times

→ Mode is $\boxed{2}$ -

• CASE II:

When more than one value occurring equally

• Example:

• Find mode of 0, 0, $\overline{1, 1, 1}$, $\overline{2, 2, 2}$, 5

SOLUTION:

Here 1 & 2 are modes

• SQUARE ROOT:

A square root of a number "X" is such that, A number "y" is square of X, simply written as: $y^2 = X$

• Example: 6 & -6 are both square root of 36.

$$6 \times 6 = 36 \quad \text{or} \quad -6 \times -6 = 36$$

6) SLOPE INTERCEPT:

$$y = mx + b$$

* Example:

$$\text{slope} = 2$$

Intercept point $(0, 3)$

solution:

$$y = 2x + 3 \quad \text{ANS}$$

(WALIMAKNOTES)

7) Midpoint Formula:

$$\frac{(x_1 + x_2)}{2}, \quad \frac{(y_1 + y_2)}{2}$$

* Example: Find midpoint b/w $(-1, 2)$
and $(3, -6)$ -

$$= \frac{(-1 + 3)}{2}, \quad \frac{2 + (-6)}{2}$$

$$= \frac{2}{2}, \quad \frac{-4}{2}$$

$$\text{midpoints} = 1, -2 = \boxed{(1, -2)}$$

• CUBE ROOT:

Whenever a number (X) is multiplied three times, then the resultant answer is called cube of that number.

Thus the cube for the number "X" becomes X^3 or X-cubed-

For example:

$$5 \times 5 \times 5 = 125 \quad \left(\begin{array}{l} \text{Hence 125 is} \\ \text{cube root of 5} \end{array} \right)$$

→ ON the other hand, the cube root of a number is the reverse process of the cube of a number and is denoted by " $\sqrt[3]{}$ ".

i-e

$$\begin{aligned} \sqrt[3]{8} &= \sqrt[3]{2 \times 2 \times 2} = (2^3)^{\frac{1}{3}} \\ &= 2 \end{aligned}$$

WAISM AK NOTES

Full pdf → 0303-4469416
FB) CSS PMU WITH WAISM AK

- فطری شاعری کے بانی - الطاف حسین
- اردو کے پہلے نغمہ - الطاف حسین
- اردو کے پہلے تذکرہ نگار - فیر تعنی میر
- پہلے صاحب دیوان شاعر - قلی قطب
- پہلے نثر نگار - گیسو دراز
- اردو کی پہلی فتنوی - کدم راؤ

• اردو کی پہلی گرامر - دریا علی ~~الطاف حسین~~ لطافت

(WASIMAK)

- اردو کا پہلا ناول - ^(WASIM) قراۃ العروس
- اردو کا پہلا افسانہ - سوز و گم
- اردو کی پہلی مطبع کتاب - انجیل
- اردو کے پہلے مضمون نگار - سر سید
- اردو میں انشائیہ نگاری - سر سید
- پاکستان کی پہلی قانون شاعرہ - ادا جعفری
- پاکستان کے پہلے انشائیہ نگار - وزیر آغا
- اردو کا پہلا سفر نامہ - عجائبات فرنگ
- پہلے پنجابی شاعر - بابا فرید گنج شکر
- اردو کا پہلا طرزِ اصد - اندر سمجھا
- آزاد نغمہ کے بانی - ن م راشد
- اردو کے پہلے افسانہ نگار - پریم چند

3) ANTI-TERRORISM ACT, 1997

"An Act to provide for the prevention of Terrorism, sectarian violence and for speedy trial of heinous offences."

~~Key~~ (WASIM AK NOTES)

- sect-1 deals with → Title, extent
 - sect-2 deals with → Definitions
 - sect-3 deals with → declaration of Intent
 - sect-6 deals with → Terrorism
 - sect-4 deals → calling Armed Forces
 - sect-5 deals → Used of Armed Forces
 - sect-8 → prohibition of ACTS
 - sect-9 → punishment of offences
 - sect-10 → power to search.
 - sect-11 → power to order
 - sect 11-G → Uniform
 - sect 12 → Jurisdiction of (ATC) ^{ANTI-Terrorism Court}
 - sect 15 → place of sitting
 - sect 21-E → Remand
 - sect 21-D → Bail
 - sect 21-C → Training
 - sect 25 → Appeal
 - sect 33 → Delegation
- SECT 40 → Amendment
 - SECT 37 → Contempt of Court
 - SECT 28 → Transfer of cases
 - SECT 26 → omitted
 - SECT 21M → Joint Trial
 - SECT 21B → Terrorist Investigate
 - SECT 13 → Establishment ATC
 - SECT 21F → Remission
 - SECT 21-I → Abetment
 - SECT 18 → public prosecutors (19)

8) Area of Triangle:

$$\text{Area} = \frac{1}{2} (\text{base}) \times (\text{height})$$

* Example:

$$\text{Base} = 5, \text{Height} = 8$$

Solution:

$$a = \frac{1}{2} (5)(8)$$

$$a = 20$$

9) Pythagoras Theorem:

$$a^2 + b^2 = c^2$$

* example: $a = 3, b = 4, c = ?$

$$c^2 = (3)^2 + (4)^2$$

$$c^2 = 9 + 16$$

$$c^2 = 25$$

(Taking $\sqrt{\quad}$ on B.S.)

$$\sqrt{c^2} = \sqrt{25}$$

$$\boxed{c = 5}$$

$$\left(\because \sqrt{c^2} = (c^2)^{\frac{1}{2}} = c \right)$$

$$\left(\because \sqrt{\quad} = \frac{1}{2} \right)$$

13) Circumference of Circle:

$$\text{Circumference} = 2\pi r$$

* Example: $r=7, c=?$

$$\begin{aligned} c &= 2\pi r \\ &= 2 \left(\frac{22}{7}\right) (7) \end{aligned}$$

$$c = 43.98$$

14) SINE (SOH): (To Find $\sin \theta$ Triangle)

$$\text{Sine} = \frac{\text{opposite}}{\text{hypotenuse}}$$

* Example: opposite = 2.8, hypotenuse = 4.9

$$s = \frac{2.8}{4.9}$$

$$s = 0.57$$

15) COSINE θ : (To Find $\cos \theta$)

$$\cos \theta = \frac{\text{Adjacent}}{\text{hypotenuse}}$$

BASIC FORMULAS

1) Arithmetic mean:

$$= \frac{\text{Sum of values}}{\text{Number of values}}$$

* Example

2, 3, 4, 1 \rightarrow ?

$$= \frac{2+3+4+1}{4} = \frac{10}{4} = \boxed{\frac{5}{2}} \text{ Ans}$$

(WASHIAKNOTES)

2) PROBABILITY:

$$\frac{\text{Target outcomes}}{\text{Total outcomes}}$$

* Example A jar contains 5 blue marbles, five red marbles, and 10 white marbles. What is probability of picking red marble at random?

$$= \frac{5}{20}$$

$$= \boxed{0.25 \text{ or } 25\%} \text{ Ans}$$

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7) Investigation For Fair Trial Act, 2013

"The Act was enacted For investigation and collection of evidence by means of modern Techniques and devices"

To prevent and effectively deal with scheduled offenses - "

[ISLAMABAD, FRIDAY, FEB, 22, 2013]

- Sect 1 → Title, extent Commencement
 - Sect 2 → Application **WASIM AK NOTES**
 - Sect 3 → Definition **Free Pdf → 0308-4469416**
 - Sect 4 → Notification of Authorized officer
 - Sect 5 → Record of suspicious conduct
 - Sect 6 deals with → Material To be placed
 - Sect 7 → Action by minister
 - Sect 8 → Application For issuance of warrant
 - Sect 9 → Judge to issue warrant in chambers
 - Sect 17 → Method's execution of warrant
 - Sect 22 → Registration of Case-
 - Sect 25 → Report of expert
 - Sect 39 → Removal of difficulty
 - Sect 36 → Power To make rules
 - Sect 30 → Powers of Judge-
- 124

- Topology Requires a hub → STAR
- Television Broadcast an example → simplex
- Cable Break stops all Transmission → Bus Topology.
- WhatsApp Founded → 2009
- COBOL → Common Business Oriented Language
- BMP → Bitmap
- DVI → Digital Video Interface.
- RTF → Rich Text Format.
- AGP → Accelerated Graphics Port.
- ADF → Automatic Document Feeder
- SWF → Shockwave Flash.
- PHP → Hypertext Processor.
- CRT → Cathode Ray Tube.
- PDF → Portable Document Format
- MAC → Media Access Control.
- IP → Internet Protocol.
- ASCII → American Standard Code For International Interchange
- ISDN → Integrated service digital network.
- NOS → Network operating system.
- TCP → Transmission Control Protocol
- HTML → Hyper Text Markup Language.
- ANSI → American National Standard Institute
- Computer → Commonly operated machine particularly used for Technical Education & Research.
- WINDOWS → Wide Interactive Network development For OFFICE Work Solution.
- MODEM → Modulator and Demodulator.
- COBOL → Common Business oriented Language.
- YAHOO → Yet Another Hierarchical Official Oracle
- JPEG → Joint photographic Experts Group.
- BASIC → Beginner All purpose Symbolic Instruction code.
- SQL → STRUCTURED Query Language.

شاہ نادر اسلام - صفیقہ عالی ذہنی
 کلبہ کا جھلکا - چراغ حسن حسرت
 سپی پارہ دل - نواب حسن نظامی
 اسیر الوقت - ڈاکٹر نذیر احمد

شہینہ - عزیز بیگم
 دو سفر ناک - شیخ عبد القادر
 گھنٹہ - عبد العظیم شرر
 بال ہیریل - اقبال
 زبردستیم - اقبال
 جاوید جامہ - اقبال
 ارتقاں حجاز - اقبال
 ڈلوپ - اشعنان المدا
 رنگن - خدیجہ مستور
 پرستانی پٹی - چراغ حسن
 چند روز - خدیجہ مستور
 رشک نہ رو - الطاف ظالمہ
 دیوان - ناصر کمالی
 محبوب فدا - افضل حق

صبح زندگی - راشد الخیری
 قطبیاں امدادیہ - سر سید
 تہرود کنی خواتی - غنٹو
 کروٹ - غنٹو
 پھندے - غنٹو
 سرائے کے کنارے - غنٹو
 راؤڈ سیکر - غنٹو
 جتازے - غنٹو
 عالی بڑیلین - غنٹو
 تماشا - غنٹو
 تہسین العالم - سر سید
 شگوفے - شفیق الرحمان
 بانگ درا - اقبال
 حزبِ اہلیم - اقبال

WASIM AK
 WASIM AK

لا

• FOOD SCIENCE:

- Vitamin "D" is Found in \rightarrow eggs, dairy products
- Breakdown of Large Food molecules \rightarrow Digestion
- Pancreas produce \rightarrow Pancreatic Juice
- Amino acids in numbers \rightarrow 20
- Calcium, iron, iodine and sodium are \rightarrow minerals
- Value of carbohydrates per gram \rightarrow 17 kJ/g
- stored feces passed out through \rightarrow Anus
- Vitamin "E" For \rightarrow Cells and vital Tissues protection
- Maximum carbohydrates obtain from \rightarrow grain Food
- size of Human intestine \rightarrow 10m
- Mouth Enzyme \rightarrow Salivary Enzyme
(WARMAN)
- citrus Fruits \rightarrow Vitamin C -
- proteins are made up of \rightarrow Amino acids
- Cow, sheeps, goats etc are \rightarrow Ruminants
- Entry & Exit of Food from stomach is controlled by \rightarrow Muscular sphincters
- Nutrient \rightarrow provides nourishment.
- Excessive use of vitamins \rightarrow Toxicity

(WARMAN NOTES)

Full pdf \rightarrow whatsapp \rightarrow 0308-4469416

ضرب الامثال :

- اشتر فیماں لٹیں نا کوٹلوں پیر مہر " - مفضول فرچی
- خدا تجھے کونا خیر نہ دے - کیفیتہ با اقتتیار نہ ہو
- آپ کا جیجا جیجا کا جیجا - خود ہیتر کر سکتے ہیں کام
- کھسیانی بلی کھسیا توچے - شتر مندرہ آدمی دھڑوں پر نضہ نکالتا
- کامل میں کیا گرجے نہیں ہوتے - نیکی کے ساتھ برائی بھی ہوتی ہے
- کاغذ کی نافوسلا نہیں ہتی - جھوٹ ہمیشہ نہیں چلتا
- آج مرے کل دیکر دل - زنگی طار منی ہے -
- گتے کو گھی بھنہ نہیں ہوتا کم طرف آدمی
- گھر نہ دیوار، میاں محلہ دار - فطرس کا شیخی بکھارنا

محاورے :

- آستین کا سانپ - چچیا ہوا دشمن
- آفت ڈھانا - مصیبت لانا
- آپ آپ ہونا - شرمندہ ہونا
- آگ بگورا ہونا - غصے میں آنا
- آنکھوں پر بھٹنا - بہت عزت کرنا
- اینا الوسلا ہا کرنا - اپنا مطلب نکالنا
- پانت کھوٹنا - عزت کھوٹانا
- جوڑم کھلنا - رکھ جانی رہنا
- باجھیں کھلنا - بہت فوش ہونا

4) HUMAN TRAFFICKING ORDINANCE, 2002

" It was enacted to provide effective measures to prevent the offences related to human trafficking " (Free pdf- 0308-4469416)

- Government means → Federal government
- Section 1 deals → Title, extent & commencement
- Sec-2 → Definition (FB/CRPMUWHWAMAK)
- Sect-3 deals with → punishment
- Sect-4 deals with → offences committed by groups
- Sect-5 → Repetition of commission of offenses
- Sect-6 → Compensation
- Sect-8 → Cognizable offenses
- Sect-9 → Investigation.
- Sect-10 → Cognizance of offenses
- Sect-11 → Idemnity
- Sect-12 → powers To make Rules

WASIM AK NOTE

✓ General Musharraf
president

✓ MR. JUSTICE
MANSOOR AHMED
secretary

اردو کتب :

- سنائا - احمد ندیم قاسمی
- چاندنگر - ابن السناء
- مرے خواب - احمد فراز
- جہان دانش - احسان دانش
- بیل و بہار - اشفاق احمد
- گھر سے گھر تک - احمد ندیم قاسمی
- ریزہ ریزہ - احمد فراز
- دنیا گول ہے (WALIMAN) ابن السناء
- گورستان - احسان دانش
- اچھے بھولے - اشفاق احمد
- جلال و جمال - احمد ندیم قاسمی
- بگولے - احمد ندیم قاسمی
- کیس کا بھولے - احمد ندیم قاسمی
- ازگی رے - احمد علی
- یادگار غالب - الطاف حسین حالی
- ننگے پاؤں - اشفاق احمد
- گڈ رانا - اشفاق احمد
- آتش فافوش - احسان دانش
- محبت اور نفرت - افراسین
- فانار، جاناں - احمد فراز

BIOLOGICAL sciences:

- Molar teeth help in → Crushing
- Esophagus also known as → Gullet
- FIRST PART OF small intestine → duodenum
- When Food leaves stomach it is called → chyme
- Vitamin B1 is → WATER soluble
- Vitamin C is → WATER soluble
- Vitamin A, D, E & K are STORED IN → FAT TISSUE
- Algae & Fungus living Together Forms → lichens
- Animals which Feed on plants → Herbivores
- Bile is produced by → liver LIVER
- Bleeding of Gums is called → scurvy
- Larger Blood vessels → veins
- size of heart is about size of → clenched fist

ENVIRONMENTAL sciences:

- WATER AREA smaller than oceans → seas
- In water cycle, sun helps water to → Evaporate
- Hepatitis, polio and typhoid → water-borne diseases
- WATER we use comes from → ICE & RAIN
- Alum is compound of → Aluminium & sulphate
- All Food chains begin with → producers
- Carnivores → Secondary Consumers
- Skin keeps itself WARM via → Insulated Fat layer
- Shape of moles → streamlined
- Herbivores are → primary Consumers
- Polar Animals live in → Arctic
- Animals which Hunt down other Animals → predators
- Rocks are made up of → crust
- Acidic gas which makes air pollutants → CO₂

6) ANTI-MONEY LAUNDERING ACT, 2010

"It is expedient to provide for prevention of money laundering etc"

- Sect 1 → Title, extent
- Sect 2 → Definitions (WALIM AK)
- Sect 3 → Offenses of money laundering.
- Sect 4 → Punishments
- Sect 5 → National Executive Committee
- Sect 6 → Financial monitoring unit
- Sect 7 → Conducting CDD
- Sect 7C → Record keeping
- Sect 8 → Attachment of property.
- Sect 9 → Investigation
- Sect 10 → Vesting of property.
- Sect 13 → Power of survey
- Sect 14 → Search and seizure
- Sect 15 → Search of persons
- Sect 16 → omitted
- Sect 17 → Retention of property
- Sect 20 → Jurisdiction
- Sect 23 → Appeal to high court.
- Sect 34 → Disclosure of information
- Sect 35 → Bar of jurisdiction
- Sect 37 → Offenses by legal persons
- Sect 43 → Powers to make rules
- Sect 46 → Validation of actions.

5) PAKISTAN PENAL CODE (PPC)

FEW SECTIONS

(WASJM AK)

S = Section

- sect 1 → Title & extent
 - Punishment of offenses (within PAK) → sect-2
 - Gender → sect-8 ✓ (wasim AK)
 - Number → sect-9 (AK)
 - "Man", "woman" → sect-10
 - "person" → sect → 11
 - "public" → sect → 12
 - "State servant" → sect 14
 - "Government" → sect 17
 - "Judge" → sect 19
 - "Court of Justice" → sect 20
 - "public servant" → sect 21
 - "wrongful gain" → sect 23
 - "Moveable property" → sect 22
 - "Dishonestly" → sect 24
 - "Fraudently" → sect 25
 - "Reason to believe" → sect 26
 - "Document" → sect 29
 - "Valuable security" → sect-30
 - "Act", "omission" → sect 33
 - "A will" → sect 31
 - "Injury" → sect-44
 - "Life" → sect - 45
 - "Death" → sect - 46
- Animal → S-47
 - Vessel → S-48
 - Oath → S-51
 - Solitary -
Confinement → S-73
 - Act of a person
of unsound mind
→ S-84
 - Communication
→ S-93
 - Abettor → S-108
 - Punishment of
Qatl-i-amd.
S-302
 - Cheating → S-420

القابات / خطابات :

- جوش بلیج آبادی - شاعر اعظم
- اختر شيرازي - اردو کا نفعان شاعر
- مولانا حسرت موہانی - جدو غزل کا امام
- علاء اقبال - حکم الاعت
- احسان دانش - شاعر عزیز
- سرزا غالب (Wazir) دبیر الملک
- دارت شاہ - پنجابی کا شاعر
- اسماعیل سرشار - عہد کا شاعر
- سر قلی محمد - خدا کے سخن
- مولوی علی الحق - بابا کے اردو
- "طوطی پنڈ" امیر خسرو کا خطاب ہے۔
- ڈبلیو نذیر احمد - عہدوں کا سرسید
- سرزاد جمال بلوچ - بابا کے بلوچی
- خواجہ میر داد - تصوف کا سر فیض
- صنیر جالندھری - شاعر اسلام
- سرزاد ایچ دیوبند - بلیبل پنڈ
- مولانا حسین آزاد - آکا کے اردو
- مولانا حسرت موہانی - کبرو غزل

• URDU — (اُردو)

نہیں کھیلے اسے داغ یا روئے سے کہہ دو
 کہ آتے آتے آئے
 (داغ دہلوی)

• اردو میں پیدا :

- اردو کے پہلے شاعر — امیر خسرو
- اردو کی پہلی شاعرہ — لقا بانی چندہ
- اردو نظم کے پہلے شاعر — نظیر اکبر بہاڑی
- قومی شاعری کے بانی — نظیر اکبر بہاڑی
- ہفت روزے کے پہلے نوبل العام یافتہ شاعر — رائزر ناٹھو
- اردو سوانح نگاری کا بانی — الطاف حسین حالی
- اردو کے پہلے مورخ (writer) آرام بابو سکینم
- اردو کے پہلے مہجور گو (NG) رفیع الدین سودا
- اردو کے پہلے تصوف شاعر (poet) اوجہ سعید زار
- اردو کی پہلی انٹرنیٹ کلمہ عالم — الشیخ الاسلام خان
- اردو کے پہلے فقیر گو — فضل
- اردو کے پہلے مرتبہ گو — فضل
- جدید نظم کے بانی — الطاف حسین حالی
- اردو کا پہلا اخبار — جام جہاں نما

• UNITS

- 1) POWER \rightarrow WATT
- 2) CURRENT \rightarrow Ampere
- 3) Electric potential \rightarrow Volt
- 4) STRESS \rightarrow PASCAL
- 5) Viscosity \rightarrow poise
- 6) Luminous intensity \rightarrow Candela
- 7) Plane Angle \rightarrow Radian.
- 8) Brightness \rightarrow Lambert
- 9) Frequency \rightarrow Hertz
- 10) wave-length \rightarrow Angstrom
- 11) Electric charge \rightarrow Columb
- 12) Electric Capacitance \rightarrow Farad
- 13) Depth of WATER \rightarrow Fathom
- 14) Work / Energy \rightarrow Joule
- 15) MASS \rightarrow kg (kilogram)
- 16) Amount of substance \rightarrow Mole
- 17) Magnetic Flux density \rightarrow Tesla
- 18) Radioactivity \rightarrow Curie
- 19) Radioactivity \rightarrow Becquerel
- 20) Temperature \rightarrow Fahrenheit
- 21) Thermodynamic Temperature \rightarrow Kelvin
- 22) weight (metric) \rightarrow Quintal
- 23) Inductance \rightarrow Henry

(WALIMAK
NOTES)

PROBABILITY:

The probability of a specified event is the chance or likelihood that it will occur.

IMPORTANT Terms of probability:

- Outcome: The result of an experiment.
- Event: Any particular outcome / outcomes
- Simple event: which can't be broken down further
- Sample Space: set of all possible simple events

Example: (probability) (Wahim Ak)

• If we roll a standard 6-sided die, describe the sample space and some simple events?

SOLUTION: Sample space all possible events:

$$= \{1, 2, 3, 4, 5, 6\}$$

→ Some examples of simple events:

- we roll a 1
- we roll a 5

→ Some compound events:

- we roll a number bigger than 4
- we roll an even number.

3) MS WORD MCQS:

- To Apply Bullet list \rightarrow Ctrl + Shift + L
- To Bold Text \rightarrow Ctrl + B
- To Cancel Text \rightarrow Esc
- To apply centre paragraph \rightarrow Ctrl + E
- Help key in word \rightarrow F1
- To Find Text in word \rightarrow Ctrl + F
- To cut Text \rightarrow Ctrl + V
- For undo we use \rightarrow Ctrl + Z
- For new document \rightarrow Ctrl + N
- To Justify paragraph \rightarrow Ctrl + J
- Outline view in word \rightarrow Alt + Ctrl + D
(WASIM AK)
- To open print page preview \rightarrow CTRL + F2
- To USE ITALIC Font \rightarrow CTRL + I
- To insert hyperlink \rightarrow Ctrl + K
- To apply small size Text \rightarrow CTRL + Shift + K
- Removing unwanted part of images \rightarrow Cropping
- Thesaurus Tool \rightarrow Synonyms & Antonyms words
- Minimum number of Rows & columns \rightarrow 1 x 1
- Landscape is \rightarrow page orientation -
- Default page orientation \rightarrow portrait
- To spell check \rightarrow F7
- Microsoft word \rightarrow Application SOFTWARE
- Which is NOT a Font style \rightarrow superscript (78)

10) Smuggling of Migrant Act, 2018

" To prevent the smuggling
of migrants "

(WASIM AK NOTES)

- Sect 1 deals with → Title, extent, commencement
- Sect 2 deals with → Definitions.
- Sect 3 → Punishment
- Sect 4 → Offences
- Sect 5 → Harboring illegal residence
- Sect 6 → Aggravated offences
- Sect 7 → Offences of Abetment
- Sect 8 → Non Criminalization
- Sect 9 → Cognizable offences
- Sect 10 → Cognizance of offences
- Sect 11 → Investigating agency
- Sect 14 → Power of making rules
- Sect 13 → Applicability of Code
- Sect 17 → Repeal.
- Sect 15 → Indemnity

3) QUADRATIC FORMULA:

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

* Example

$$A = 1, B = 4, C = 4$$

$$\bullet X = \frac{-4 \pm \sqrt{(4)^2 - 4(1)(4)}}{2(1)}$$

$$\bullet X = \frac{-4 \pm \sqrt{16 - 4(4)}}{2}$$

$$\bullet X = \frac{-4 \pm \sqrt{0}}{2} \quad (\text{WASIMAKNOTES})$$

$$\therefore X = \frac{-4}{2} \quad X = -2$$

4) DISTANCE FORMULA:

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

* Example

Find distance b/w points

(6, 6) and (2, 3) ?

- سبب کا دافت - بیطرس بخاری
- ایمان بہار - اشفاق احمد
- لالہ طور - اختر شیرانی
- سدس حالی - الطاف حسین حالی
- برزخ - امجد اسلام
- اندازِ سبعا - اعانت العنوی
- آفریں آرمی - انتظار حسین
- لبس - انتظار حسین
- دیوار کا پتھر - انیس نائی
- شہر باغیچہ - بالو قدسیہ
- عوالم کی گلیاں - بالو قدسیہ
- دانت کا دستہ - بالو قدسیہ
- شعلہ طور (Wanima) - مگر فرادہ
- پاکستانی کلیم - جمیل حامی
- فوشبو - بیرون شاہ
- انکار - بیرون شاہ
- ہر فری فریوں - حکیم امجد شاہ
- نادر - خلیفہ مستور
- ہندبر کا سائے - محاسن اعجاز علی
- ولی سے اقبال تک - سید عبداللہ
- عراة العروس - شمیم نذیر امجد
- ایک سوئزر - شیخ محمد ارم
- عوج کوئزر - شیخ محمد ارم

• اصل نام :

- فرزا غالب - اسد اللہ خان
- امیر خسرو - ابو الحسن یحییٰ بن زین
- نیر اکبر آبادی - شیخ محمد
- مزاق گورکھپوری - رگھوپتی سہا
- سودا - فرزا محمد رفیع
- نسیم حجازی - محمد شریف
- میرزا ادیب - (داؤد علی)
- آتش - خواجہ صدر علی
- صرت فوہانی - فضل الحسن
- حبیب غالب - حبیب (محمد)
- حسن عسکری - محمد حسن
- جوش علیچ آبادی - شبیر حسن
- لیطرس بخاری - سید احمد شاہ
- رفیق شیرانی - محمد داؤد خان
- امین النشاہ - شیر محمد خان
- اسلم راہی - محمد اسلم علی
- احمد راہی - غلام احمد

WASIM AK

FIA ACTS + GENERAL

1) PASSPORT ACT:

"The passport Act was enacted to regulate departure from the entry into Pakistan and visit to Foreign Countries of citizens of Pakistan."

- Came into Force → 11th March 1974
- Section deal with Repeal → 15
- It extends to → whole Pakistan
- section deals with power to arrest etc → 7
- Section deals with power to cancel, impound → 8
- Total Sections → 15 (WASIM AK NOTES)
PDF - 0308-4469416 (Free)
- Section deals with title, extent → 1
- Section deals with definitions → 2
- Section deals with certain Acts to deemed → 5
- Section deals with delegation of power → 11
- Section deals with rule making → 13
- Pakistani passport is not valid for → Israel
- Sect deals with act not to derogate → 14
- First passport issued by → Ayub Regime (1960)

Passport means: A passport which is for the time being valid and include any such permit, issued by the Govt. of PAK.

2) EMIGRATION ORDINANCE, 1979

"It regulates the Emigration of Pakistanis for employment abroad."

The ordinance has repealed the Emigration Act, 1922 (VII of 1922).

(WALIMAK)

- Also called → ordinance XVII of 1979
- Fourth chapter deals with → General
- 2nd chapter deals with → Director Gen/protector
- sixth chapter deals with → Rules
- First chapter deals with → preliminary
- section 1 deals with → Title, extent, application (WALIMAK, NOTES)
- Section 2 deals with → Definitions
- Section 3 deals with → Director-General
- Section 4 deals with → Functions Director General
- Section 4-A deals → Function of Corporation
- Section 7 → Appointment of Labour
- Advisory Committee → section 10
- section 12 → overseas employment
- section 16 → power to make rules -
- Section 18 → Fraudulent inducing
- Deals with savings → 27 section
- Deals with repeal → section 28
- Deals with appeal → 24-A
- Deals with special courts → 24
- Deals with unlawful immigration → 17

CHE

- اردو کا لفظی معنی — لاشکر
- اردو کس زبان کا لفظ — ترکی
- ہندوی زبان کہا جاتا ہے — اردو
- ریختہ کے لفظی معنی — لہجہ دکن
- فارسی زبان — ایران
- انگریزوں کا اردو کے پیدائشی نام — فورت ولیم کالج
- اردو سے تباہی دہر میں رائج ہوئی — دکن
- اردو زبان میں مشتمل الفاظ توڑیا — 54009
- فعلوں کے لفظی سرکاری زبانیں — عربی اور فارسی
- انگریز حکومت نے کب اردو زبان کو سرکاری زبان کہا — 1832
- اردو ہند میں تنازع کب ہو گیا — 1867
- درجہ دہ — الطاف خاں
- اردو نثر میں قدیم صنف — کہہ حکمرانی
- آرائش محفل کس کی کہ — فیروز بخش صیادی
- داستان اعدا ناطل میں کون سی بات مشہور — طوالت
- پہلی لکڑی کس کا ناطل ہے — عصمت چغتائی
- پہلی کھارہ کس کا ناطل ہے — عصمت چغتائی
- ڈرامہ کس زبان کا لفظ ہے — یونانی
- افسانے کی تاریخ کتنے ادوار پر مشتمل — 5
- افسانے میں مزاج نگاری — شفیق الرحمن
- کفن کس کا افسانہ ہے — بیرجم چند
- کتبہ کس کا افسانہ — غلام عباس

* Example:

$$\text{Adjacent} = 11$$

$$\text{hypotenuse} = 13$$

Solution:

$$c = \frac{11}{13}$$

$$= 0.85$$

16) Tan Q (Tangent):

$$\text{Tan } Q = \frac{\text{opposite}}{\text{Adjacent}}$$

* Example:

$$\text{opposite} = 15$$

$$\text{Adjacent} = 8$$

Sol:

$$t = \frac{15}{8}$$

$$\text{Tan } Q = 1.87 \text{ ANI}$$

Solution:

$$d = \sqrt{(6-2)^2 + (6-3)^2}$$

$$= \sqrt{(4)^2 + (3)^2}$$

$$= \sqrt{16+9}$$

$$= \sqrt{25}$$

$$\boxed{d = 5} \quad \underline{\text{use the given unit.}}$$

5) SLOPE FORMULA:

$$\frac{y_2 - y_1}{x_2 - x_1}$$

* Example: Coordinates = $(-2, -1)$, $(4, 3)$

Solution:

$$S = \frac{3 - (-1)}{4 - (-2)}$$

$$= \frac{4}{6}$$

$$\boxed{= \frac{2}{3}} \text{ ANS}$$

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3) QUADRATIC FORMULA:

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

★ Example

$$A = 1, B = 4, C = 4$$

$$\bullet X = \frac{-4 \pm \sqrt{(4)^2 - 4(1)(4)}}{2(1)}$$

$$\bullet X = \frac{-4 \pm \sqrt{16 - 4(4)}}{2}$$

$$\bullet X = \frac{-4 \pm \sqrt{0}}{2} \quad (\text{WARMANOTES})$$

$$\bullet X = \frac{-4}{2} \quad X = -2$$

4) DISTANCE FORMULA:

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

★ Example

Find distance b/w points

(6, 6) and (2, 3) ?