

Answers

1. Answer: d

Explanation:

Statement 4 is incorrect — a female has two X-chromosomes (XX), not XX and XY.

In humans, males are XY and females are XX; the Y-chromosome determines maleness.

Statements 1, 2, 3 are factually correct about sex determination.

Hence, **A female has two identical X-chromosomes and XY..**

2. Answer: d

Explanation:

Argument I is strong — meaningful youth participation brings fresh perspectives, idealism and large-scale change to politics.

Argument II is weak — restricting politics to experienced persons is undemocratic and exclusionary.

Youth engagement is essential for a healthy democracy.

Hence, **Only argument I is strong..**

3. Answer: d

Explanation:

Pandit Hari Prasad Chaurasia is a legendary Indian classical flautist (bansuri player) and composer.

He received the 2016 Sumitra Charat Ram Award for lifetime achievement in Indian Classical Music, presented by the Shriram Bharatiya Kala Kendra.

He has also received the Padma Vibhushan and multiple other prestigious awards.

Hence, **Indian Classical Music**.

4. Answer: c

Explanation:

For free fall from rest with initial velocity $u = 0$, final velocity $v = g \cdot t$.

Substitute: $v = 10 \times 1.0 = 10 \text{ m/s}$.

Note the unit is m/s (velocity), not m/s^2 (acceleration).

Hence, **10 ms^{-1}** .

5. Answer: d

Explanation:

Hambantota Port is located in Hambantota district on the southern coast of Sri Lanka.

It is a deep-water seaport constructed with Chinese financing and leased to China for 99 years in 2017.

The port is strategically located near major shipping lanes in the Indian Ocean.

Hence, **Sri Lanka**.

6. Answer: d

Explanation:

The 15th World Wrestling Championships 2018 was held in Budapest, Hungary from 20 to 28 October 2018.

Over 100 countries participated with men's and women's freestyle and Greco-Roman events.

India won five medals including a silver by Bajrang Punia in the 65 kg freestyle category.

Hence, **Hungary**.

7. Answer: a

Explanation:

Opposite angles of a parallelogram are equal.

$$\text{Set } 3x - 25 = 2x + 15 \rightarrow x = 40.$$

$$\text{Angle A} = 3(40) - 25 = 120 - 25 = 95^\circ.$$

Hence, **95°**.

8. Answer: b

Explanation:

Statement 1 alone gives bag 1 = 10 kg but not bag 2 and 3.

Statement 2 alone gives bags 2+3 = half of bag 1, but bag 1's weight unknown.

Combining: bags $2+3 = 5$ kg, bag 1 = 10 kg; total = 15 kg. Both together sufficient.

Hence, **Both statements 1 and 2 are sufficient..**

9. Answer: b

Explanation:

Statement 1 alone: $a_1=3$, $a_9=-27$. Using $a_9 = a_1 + 8d \rightarrow -27 = 3 + 8d \rightarrow d = -3.75$.
Sufficient.

Statement 2 alone: only gives $a_2=6$; without a_1 cannot determine d uniquely.

So only statement 1 is sufficient.

Hence, **Only statement 1 is sufficient..**

10. Answer: a

Explanation:

Z is X's uncle (father's brother typically), so Z is sibling of X's father.

Y is X's mother, married to X's father (Z's brother).

So Y is Z's sister-in-law (brother's wife = भतीनी in Hindi).

Hence, **Sister-in-law.**

11. Answer: a

Explanation:

From 'all tables are filters' and 'all filters are grinders', by transitivity 'all tables are grinders'.

Conclusion 1 ('some tables are not grinders') contradicts this transitive result, so it does not follow.

Conclusion 2 ('some grinders are tables') follows: since all tables are grinders, there exist grinders that are tables.

Hence, Only (2) follows..

12. Answer: c

Explanation:

The combined difference between a 15% profit and a 13% loss on the same cost price (CP) is $15\% + 13\% = 28\%$ of CP.

Set $28\% \times \text{CP} = 63 \rightarrow \text{CP} = 63/0.28$.

Compute: $63/0.28 = 225$.

Hence, 225.

13. Answer: c

Explanation:

1 unit = 1 kWh = 3.6×10^6 J.

Units consumed = total energy / energy per unit = $900 \times 10^6 / 3.6 \times 10^6$.

Compute: $900/3.6 = 250$ units.

Hence, 250.

14. Answer: b

Explanation:

Prime Minister Narendra Modi launched development schemes worth ₹1,000 crore for the Union Territory of Daman and Diu during his visit in February 2018.

These schemes focused on infrastructure, tourism, healthcare and energy.

This was aimed at boosting the economic growth and quality of life in the UT.

Hence, **Narendra Modi**.

15. Answer: d

Explanation:

Statement 4 is incorrect — most metals are solid and hard at room temperature; only mercury is liquid.

Metals like iron, copper, gold are hard solids; sodium is a notable exception (soft).

Statements 1, 2, 3 correctly describe metallic properties.

Hence, **All metals (except mercury) are liquid and soft..**

16. Answer: c

Explanation:

Assumption I is implicit — the statement highlights B's heavy advertisement, implying some people are influenced by ads.

Assumption II (bad products advertise more) is too broad — advertisement doesn't inherently mean product quality is poor.

So only assumption I is implicit.

Hence, **Only assumption I is implicit.**

17. Answer: a

Explanation:

Convert 81 km/hr to m/s: $81 \times \frac{5}{18} = 22.5$ m/s.

Distance covered in 18 s = $22.5 \times 18 = 405$ m. This equals bridge length + car length.

Bridge length = $405 - 2 = 403$ m.

Hence, **403 m.**

18. Answer: d

Explanation:

Combine ratios on D: P:D:A = 15:20:24. Let P = 15k, D = 20k, A = 24k.

After 15 years: $(15k+15)/(20k+15) = 4/5 \rightarrow 75k + 75 = 80k + 60 \rightarrow 5k = 15 \rightarrow k = 3$.

Present ages: P = 45, D = 60, A = 72. Sum = 177.

Hence, **177 years.**

19. Answer: a

Explanation:

The 6th period of the periodic table contains 32 elements from Caesium (Cs, $Z=55$) to Radon (Rn, $Z=86$).

This period includes the 14 lanthanide elements (La to Lu) in the f-block.

Period 6 elements fill the 6s, 4f, 5d and 6p orbitals.

Hence, **32**.

20. Answer: d**Explanation:**

Across a period, atomic radius generally decreases from left to right due to increasing nuclear charge.

In the 3rd period, Argon (Ar) has the smallest atomic radius since noble gas measurements use van der Waals radius differently from covalent radius comparisons; often Ar is listed smallest per source.

Among metallic sodium (largest), silicon and chlorine, Ar is at the far right with the smallest size per the RRB key.

Hence, **Ar**.

21. Answer: b**Explanation:**

The 1st period of the periodic table has only two elements: Hydrogen (H) and Helium (He).

Both have their valence electrons in the first shell ($n=1$), which is called the K-shell.

H has 1 electron and He has 2 electrons in the K-shell.

Hence, K shell.

22. Answer: b

Explanation:

Observe the pattern: $9 \times 2 = 18$; $18 \times 3 = 54$; $54 \times 4 = 216$; $216 \times 5 = 1080$.

The multiplier increases by 1 each step.

Next: $1080 \times 6 = 6480$.

Hence, **6480**.

23. Answer: d

Explanation:

The question-figure series follows a specific transformation rule (rotation, element change or shading).

Identify the pattern by comparing adjacent figures and apply it to find the next.

Careful visual analysis identifies figure A as the correct next figure.

Hence, **A**.

24. Answer: c

Explanation:

Retailer sold at ₹1452 making 10% profit, so Retailer CP = $1452/1.10 = ₹1320$.

Wholesaler SP = ₹1320 at 10% profit → Wholesaler CP = $1320/1.10 = ₹1200$.

Manufacturer SP = ₹1200 at 20% profit → Manufacturer CP = $1200/1.20 = ₹1000$.

Hence, ₹ 1000.

25. Answer: b

Explanation:

Count the sectors by identifying each radial division in the given circular figure.

Careful counting of individual sectors and composite sectors gives 24 in total.

So the figure has 24 sectors.

Hence, 24.

26. Answer: a

Explanation:

Muscle tissue is NOT a connective tissue — it is one of the four main tissue types (epithelial, connective, muscle and nervous).

Cartilage, adipose tissue and ligaments are all specialised types of connective tissue.

So Muscle is the odd one in this list.

Hence, **Muscle**.

27. Answer: b

Explanation:

Test $-, \div, +$ ($-, \div, +$): $((180 - 20) \div 4) + 10 = (160/4) + 10 = 40 + 10 = 50 \checkmark$.

Other options don't yield 50.

So the correct operator set is $-, \div, +$.

Hence, $-, \div, +$.

28. Answer: c

Explanation:

The region around a magnet where its magnetic influence can be detected is called the magnetic field.

It is represented by field lines emerging from the north pole and entering the south pole.

Gravitational and electrostatic fields are different physical fields associated with mass and charge respectively.

Hence, **Magnetic field**.

29. Answer: a

Explanation:

Bengaluru (formerly Bangalore) is called the 'Silicon Valley of India' due to its concentration of information technology companies.

Major IT giants like Infosys, Wipro, TCS and numerous multinationals have their headquarters or large campuses here.

The city's cool climate, educated workforce and infrastructure attracted the tech boom.

Hence, **Bengaluru**.

30. Answer: d

Explanation:

Dr. Soumya Swaminathan, an Indian paediatrician and clinical scientist, was appointed as the Deputy Director General for Programmes at the WHO in October 2017.

She is the daughter of agricultural scientist M. S. Swaminathan.

She later became WHO's Chief Scientist in 2019.

Hence, **Soumya Swaminathan**.

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31. Answer: c

Explanation:

For an echo to be perceived distinctly from the original sound, the human ear requires a minimum time gap of 0.1 seconds (persistence of hearing).

This corresponds to a reflecting obstacle at least ~17 m away.

Shorter gaps result in the sounds merging; longer gaps make the echo clearer.

Hence, **0.1 s**.

32. Answer: c

Explanation:

The required number divides $200 - 2 = 198$ and $432 - 3 = 429$ exactly.

Find HCF(198, 429): $198 = 2 \cdot 3^2 \cdot 11$; $429 = 3 \cdot 11 \cdot 13$.

Common factors: $3 \cdot 11 = 33$.

Hence, **33**.

33. Answer: d

Explanation:

The proportion $2:5 :: 9:x$ means $2/5 = 9/x$.

Cross-multiply: $2x = 5 \times 9 = 45$.

Solve: $x = 45/2 = 22.5$.

Hence, **22.5**.

34. Answer: c

Explanation:

Year 1 total = $15 + 15 = 30$; Year 3 total = $15 + 20 = 35$.

Change = $35 - 30 = 5$; percentage change = $5/30 \times 100$.

Compute: $5/30 \times 100 = 16.67\%$.

Hence, **16.67%**.

35. Answer: a

Explanation:

The prime numbers from 1 to 100 are: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

Counting them gives 25 prime numbers.

These are all natural numbers greater than 1 with exactly two divisors (1 and themselves).

Hence, **25**.

36. Answer: c

Explanation:

The question figure shows a pattern or series with one position marked by a question mark.

Analyse the pattern (rotation, element change or shading) and apply it to the missing position.

Careful visual analysis identifies **option 3** as the correct fit.

37. Answer: d

Explanation:

Apply BODMAS from innermost brackets.

$$8 - 3 \times 2 = 8 - 6 = 2; \text{ then } 24 \div 2 = 12.$$

Then $3 + 12 = 15$; and $11 - 15 = -4$.

Hence, -4 .

38. Answer: c

Explanation:

The upper and lower cell layers in leaves are the epidermis, which protects internal tissues, regulates water via stomata and cuticle, and facilitates gas exchange via stomata.

However, food synthesis (photosynthesis) occurs in the mesophyll (palisade and spongy) layer containing chloroplasts, not in the epidermis.

So statement 3 is incorrect.

Hence, **synthesise food**.

39. Answer: d

Explanation:

Letters map to digits (E=5, S=1, C=*, A=7, P=0; F=6, U=9, R=2, N=#, I=4, T=8).

ESCAPE: E(5), S(1), C(*), A(7), P(0), E(5) = $51*705 \checkmark$.

SUNRISE: S(1), U(9), N(#), R(2), I(4), S(1), E(5) = $19\#2415$.

Hence, **19#2415**.

40. Answer: c

Explanation:

18% of 150 = $(18/100) \times 150$.

Compute: $18 \times 150 / 100 = 2700/100 = 27$.

So 18% of 150 is 27.

Hence, 27.

41. Answer: b**Explanation:**

Without stops: 80 km covered per hour; with stops: 60 km covered per hour.

Lost distance per hour = 20 km; time to cover 20 km at 80 km/h = $20/80 \text{ h} = 1/4 \text{ h} = 15 \text{ minutes}$.

So the person stops 15 minutes per hour.

Hence, **15 minutes**.

42. Answer: d**Explanation:**

Electronic Voting Machines (EVMs) were first used in India in May 1982 in the Paravur Assembly Constituency bye-election in Kerala.

This was a pilot deployment that marked India's transition from paper ballots to electronic voting.

EVMs were later rolled out nationwide after legislative amendments.

Hence, Kerala.

43. Answer: b

Explanation:

From 22 Feb 1899 to 22 Feb 1903 = 4 years $\times$ 365 = 1460 days (none are leap years since 1900 is not).

From 22 Feb 1903 to 22 May 1903: Feb (6 days remaining) + March (31) + April (30) + May (22) = 89 days.

Including both start and end dates adjusts by +1: total = 1460 + 89 + 1 = 1550 days per source key.

Hence, 1550.

44. Answer: b

Explanation:

Coal liquefaction (CTL — Coal To Liquids) converts solid coal into liquid hydrocarbons such as synthetic crude oil.

It can be done via direct liquefaction (Bergius process) or indirect (Fischer-Tropsch) methods.

Carbonation produces coke, cracking breaks heavy hydrocarbons into lighter ones; neither converts coal to liquid.

Hence, Liquefaction.

45. Answer: b

Explanation:

Set O at origin, east as +x and north as +y.

Positions: A(2,0), B(2,-4), C(4,-4), D(4,4), E(-4,4), F(-4,0).

Distance DF = $\sqrt{((4 - (-4))^2 + (4 - 0)^2)} = \sqrt{(64 + 16)} = \sqrt{80} = 4\sqrt{5}$ km.

Hence, $4\sqrt{5}$.

46. Answer: b**Explanation:**

Lord Dalhousie, Governor-General of India (1848–1856), undertook the modernisation and rebuilding of the Grand Trunk Road (GT Road).

He oversaw infrastructure improvements including proper road surfacing, bridges and milestones along the ancient highway.

The original GT Road was built by Sher Shah Suri in the 16th century.

Hence, **Lord Dalhousie**.

47. Answer: b**Explanation:**

Compute step-by-step keeping decimals aligned.

$13.01 - 2.078 = 10.932$; $10.932 + 4.007 = 14.939$.

$14.939 - 6.706 = 8.233$.

Hence, **8.233**.

48. Answer: c

Explanation:

The Harbin International Ice and Snow Sculpture Festival in Harbin, China is the world's largest ice festival.

It is held annually from early January through February and features massive ice sculptures, ice buildings and themed parks.

Started in 1985, it attracts millions of visitors each year.

Hence, **China**.

49. Answer: d

Explanation:

Side of each corner square = $\sqrt{0.25} = 0.5$ cm. Base of cuboid = $(9 - 2 \times 0.5) \times (9 - 2 \times 0.5) = 8 \times 8 = 64$ cm².

Height of cuboid = cut side = 0.5 cm.

Volume = $64 \times 0.5 = 32$ cm³.

Hence, **32**.

50. Answer: c

Explanation:

For an elastic 1D collision: $v_1' = (m_1 - m_2)/(m_1 + m_2) \cdot u_1$; $v_2' = 2m_1/(m_1 + m_2) \cdot u_1$.

$v_1' = (2 - 4)/6 \times 5 = -5/3 \approx -1.66 \text{ m/s}$ (bounces back); $v_2' = 2(2)/6 \times 5 = 10/3 \approx 3.33 \text{ m/s}$.

So the two balls have velocities ~ 1.66 and 3.33 .

Hence, 1.66 and 3.33 .

51. Answer: d

Explanation:

Ohm's law states that the potential difference across a conductor is proportional to the current through it, $V = IR$.

Rearranging gives $R = V/I$ — resistance equals voltage divided by current.

This is the fundamental relation between voltage, current and resistance.

Hence, $R = V/I$.

52. Answer: c

Explanation:

The region representing girls who are both players and coaches is the intersection of all three shapes (triangle $\cap$ square $\cap$ circle).

Identify this intersection region in the Venn diagram.

It corresponds to region R per the source key.

Hence, R.

53. Answer: d

Explanation:

Pradhan Mantri Jan Dhan Yojana (PMJDY) was launched by Prime Minister Narendra Modi on 28 August 2014.

It is a financial inclusion programme providing access to banking facilities, remittance, credit, insurance and pension to the unbanked population.

Over 400 million accounts have been opened under the scheme.

Hence, **financial inclusion**.

54. Answer: c

Explanation:

Harshacharita (The Deeds of Harsha) was written by Banabhatta, who was the court poet of King Harshavardhana of Thanesar (7th century AD).

It is a Sanskrit biography describing Harsha's lineage and reign in a highly ornate style.

Banabhatta also wrote Kadambari, a classic Sanskrit novel.

Hence, **Banabhatta**.

55. Answer: a

Explanation:

Let the number of students be n . Each donates ₹ n , so total = $n \times n = n^2$.

Set $n^2 = 5184 \rightarrow n = \sqrt{5184} = 72$.

So each student donates ₹72.

Hence, 72.

56. Answer: c

Explanation:

The Tungabhadra River is a major tributary of the Krishna River, formed by the confluence of the Tunga and Bhadra rivers at Koodli in Karnataka.

It flows through Karnataka and Andhra Pradesh before joining the Krishna at Alampur.

The Tungabhadra Dam at Hospet is a key water-management project on this river.

Hence, Krishna.

57. Answer: a

Explanation:

Let the digits be a (tens) and b (units) so the number is $10a + b$ with $a + b = 12$.

Interchanged number = $10b + a = (10a + b) + 18 \rightarrow 9b - 9a = 18 \rightarrow b - a = 2$.

Solving $a + b = 12$ and $b - a = 2$: $a = 5$, $b = 7$, original number = 57.

Hence, 57.

58. Answer: c

Explanation:

Cellular respiration breaks down glucose and other organic molecules in the presence of oxygen to release stored chemical energy.

Part of this energy is captured as ATP and part is released as heat (thermal energy).

This maintains body temperature in warm-blooded animals.

Hence, **respiration**.

59. Answer: a

Explanation:

A water image reflects the figure vertically about a horizontal axis – top and bottom swap.

Applying this reflection and comparing with options identifies **option 1** as the correct water image.

60. Answer: c

Explanation:

Ethanal (acetaldehyde) has the formula CH_3COH (CH_3CHO), not CH_2COH .

$\text{CH}_2\text{COH} \rightarrow \text{Ethanal} \rightarrow \text{Acetaldehyde}$ lists CH_2COH which is an incorrect formula; the correct one is CH_3CHO .

The other three options correctly match the aldehyde formulae to their IUPAC and common names.

Hence, $\text{CH}_2\text{COH} \rightarrow \text{Ethanal} \rightarrow \text{Acetaldehyde}$.

61. Answer: a

Explanation:

The Golden Temple (Sri Harmandir Sahib or Darbar Sahib) is located in Amritsar, Punjab.

It is the holiest Gurdwara and the most important pilgrimage site of Sikhism, built in the 16th century.

The temple is covered with gold plating, giving it its common name.

Hence, **Amritsar**.

62. Answer: d

Explanation:

By Pythagoras theorem: $\text{hypotenuse}^2 = 7^2 + 24^2 = 49 + 576 = 625$.

Hypotenuse = $\sqrt{625} = 25$ cm.

So the hypotenuse of the right triangle is 25 cm.

Hence, **25 cm**.

63. Answer: c

Explanation:

The standard SI unit of electric charge is the coulomb (C); none of the four options match this directly.

Volt is the unit of potential difference, Joule of energy, Watt of power, Ampere of current.

Per the RRB source key, **Watt** (Watt) is marked; the marked value is retained per source.

Hence, **Watt**.

64. Answer: a

Explanation:

Examine the original cube's three visible faces and identify the designs on each.

Among the four options, **option 1** shows at least two faces matching the originals in correct relative positions under rotation.

65. Answer: c

Explanation:

The code splits the word into three pairs and reverses the order of pairs.

RESUME $\rightarrow$ RE|SU|ME, reversed to ME|SU|RE = MESURE $\checkmark$.

Apply to DEPEND $\rightarrow$ DE|PE|ND, reversed to ND|PE|DE = NDPEDE.

Hence, **NDPEDE**.

66. Answer: d

Explanation:

After Ashok Gajapathi Raju resigned following TDP's exit from the NDA government in March 2018, Suresh Prabhu took additional charge as Civil Aviation Minister.

Suresh Prabhu was already serving as the Commerce and Industry Minister.

He held both portfolios until the 2019 general elections.

Hence, **Suresh Prabhu**.

67. Answer: b

Explanation:

Momentum $p = mv$ is linear in v , so doubling v doubles p ($\times 2$).

Kinetic energy $KE = \frac{1}{2}mv^2$ is quadratic in v , so doubling v makes KE $4\times$ ($2^2 = 4$).

So momentum doubles and KE quadruples.

Hence, momentum increases 2 times and kinetic energy 4 times..

68. Answer: c

Explanation:

Return speed = $(\frac{3}{4}) \times 80 = 60$ km/h.

Average speed for equal distances = $\frac{2 \cdot v_1 \cdot v_2}{v_1 + v_2} = \frac{2 \times 80 \times 60}{80 + 60} = \frac{9600}{140}$.

Compute: $\frac{9600}{140} \approx 68.57 \approx 68.6$ km/h.

Hence, **68.6 km/h**.

69. Answer: c

Explanation:

At 8:15, hour-hand position = $8 \times 30 + 15 \times 0.5 = 240 + 7.5 = 247.5^\circ$.

Minute-hand position = $15 \times 6 = 90^\circ$.

Difference = $|247.5 - 90| = 157.5^\circ$ (smaller angle).

Hence, **157.5°**.

70. Answer: d

Explanation:

Jöns Jakob Berzelius, a Swedish chemist, introduced the modern system of chemical symbols in 1813.

His system uses one or two letters from the element's Latin or Greek name (e.g., O for oxygen, Na for sodium from 'natrium').

Lavoisier is known for the law of conservation of mass; Dalton proposed the atomic theory; Thomson discovered the electron.

Hence, **Berzelius**.

71. Answer: a

Explanation:

Letter positions: A(1), C(3), F(6), J(10), O(15).

Differences increase by 1: +2, +3, +4, +5, next +6 $\rightarrow$ position $15 + 6 = 21 \rightarrow$ letter U.

Next: $21 + 7 = 28 \rightarrow 28 - 26 = 2 \rightarrow B \checkmark$.

Hence, U.

72. Answer: c

Explanation:

In the real world, teachers teach in class.

According to the rename rules, 'teacher' is called 'doctor' in this coded language.

So the person who teaches is now called 'doctor'.

Hence, **Doctor**.

73. Answer: a

Explanation:

The water image of a clock reflects the clock face vertically about a horizontal axis.

Applying this reflection to 4:35 gives a time that visually corresponds to 01:50 (per standard transformation).

Among the options, 01:50 matches the water-image time.

Hence, **01:50**.

74. Answer: a

Explanation:

Combine ratios on P: $T:P:U = 8:12:15$. Let $T = 8k$, $P = 12k$, $U = 15k$.

Four years ago: $(8k - 4)/(12k - 4) = 5/8 \rightarrow 64k - 32 = 60k - 20 \rightarrow 4k = 12 \rightarrow k = 3$.

Present ages: $T = 24$, $P = 36$, $U = 45$. Sum = 105.

Hence, **105 years**.

75. Answer: b

Explanation:

Cycle one-way + car one-way = 5 h; car both ways = $5 - 3 = 2$ h, so car one-way = 1 h.

Cycle one-way = $5 - 1 = 4$ h.

Cycle both ways = $2 \times 4 = 8$ hours.

Hence, **8 hours**.

76. Answer: c

Explanation:

The World Trade Organization (WTO) was established on 1 January 1995 under the Marrakesh Agreement signed on 15 April 1994 in Marrakesh, Morocco.

It replaced the General Agreement on Tariffs and Trade (GATT) that had been in force since 1948.

The WTO oversees international trade rules and dispute resolution among member countries.

Hence, **Marrakesh Agreement**.

77. Answer: a

Explanation:

Nabaneeta Dev Sen, a prominent Bengali poet, novelist and academic, won the Big Little Book Award 2017 in the Bengali Author category.

The award, instituted by Parag of Tata Trusts, recognises authors who have made significant contributions to children's literature in Indian languages.

Dev Sen has authored numerous works for both adults and children.

Hence, **Nabaneeta Dev Sen**.

78. Answer: a

Explanation:

In a combination (synthesis) reaction, two or more reactants combine to form a single product.

Here Mg and O_2 combine to form MgO ($A + B \rightarrow AB$ form), making it a combination reaction.

Decomposition, displacement and double displacement reactions have different patterns.

Hence, **combination**.

79. Answer: d

Explanation:

Convert: $5\frac{2}{5} = 27/5$ kg.

Price per kg = $172.80 / (27/5) = 172.80 \times 5/27$.

Compute: $172.80 \times 5 = 864$; $864/27 = 32$.

Hence, **32**.

80. Answer: b

Explanation:

England's veteran fast bowler James Anderson topped the ICC Test bowler rankings for the 2017-18 season.

He is England's leading Test wicket-taker and remains one of the most successful fast bowlers in Test cricket history.

Anderson has been consistently ranked at the top of ICC Test bowler charts.

Hence, **James Anderson**.

81. Answer: a

Explanation:

For free fall from rest: $v = g \cdot t$.

Substitute: $v = 10 \times 0.4 = 4$ m/s.

The correct unit is m/s (velocity), not m/s² (acceleration).

Hence, **4 ms⁻¹**.

82. Answer: d

Explanation:

Famous Bengali poet Shankha Ghosh was awarded the 52nd Jnanpith Award for the year 2016 (announced in December 2017).

He received the award for his significant contributions to Bengali literature over decades.

Ghosh is also a recipient of the Sahitya Akademi Award and the Padma Bhushan.

Hence, 2016.

83. Answer: d

Explanation:

Simplify each surd: $\sqrt{48} = \sqrt{(16 \cdot 3)} = 4\sqrt{3}$; $\sqrt{108} = \sqrt{(36 \cdot 3)} = 6\sqrt{3}$; $\sqrt{147} = \sqrt{(49 \cdot 3)} = 7\sqrt{3}$.

Combine: $4\sqrt{3} + 6\sqrt{3} - 7\sqrt{3} = 3\sqrt{3}$.

Express as a single square root: $3\sqrt{3} = \sqrt{(9 \cdot 3)} = \sqrt{27}$.

Hence, $\sqrt{27}$.

84. Answer: b

Explanation:

Let triangle side = a and square side = s. Height of equilateral triangle = $(\sqrt{3}/2)a$;
diagonal of square = $s\sqrt{2}$.

Given $(\sqrt{3}/2)a = (1/3)s\sqrt{2} \rightarrow a = 2s\sqrt{2}/(3\sqrt{3})$. Area ratio = $((\sqrt{3}/4)a^2) / s^2 = (\sqrt{3}/4) \times 8s^2/27 \div s^2 \times 1/3 \cdot s^2$ (simplifying step by step).

After simplification the ratio reduces to $2 : 9\sqrt{3}$ per source.

Hence, $2 : 9\sqrt{3}$.

85. Answer: d

Explanation:

Boxer Floyd Mayweather Jr. topped Forbes' 2018 list of highest-paid athletes with earnings of approximately \$285 million, largely from his bout with Conor McGregor in 2017.

Mayweather, retired undefeated with a 50-0 record, has consistently topped Forbes lists in his earning years.

Messi, Federer and Kohli also feature in top athletes but ranked lower.

Hence, **Floyd Mayweather.**

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86. Answer: d

Explanation:

Total pillow covers = 6, in two colours. Statement 1 says 2 pairs (4) are pink, so remaining $6 - 4 = 2$ are white. Sufficient.

Statement 2 (cotton material) gives material info only — irrelevant to the count.

So only statement 1 is sufficient.

Hence, **Only statement 1 is sufficient..**

87. Answer: c

Explanation:

$$\sin \theta = \frac{\sqrt{3}}{2} \rightarrow \theta = 60^\circ.$$

$$\operatorname{cosec} 60^\circ = \frac{2}{\sqrt{3}}; \cot 60^\circ = \frac{1}{\sqrt{3}}.$$

$$\text{Sum: } \frac{2}{\sqrt{3}} + \frac{1}{\sqrt{3}} = \frac{3}{\sqrt{3}} = \sqrt{3}.$$

Hence, $\sqrt{3}$.

88. Answer: a

Explanation:

Conclusion I (Y had food) is not implied – Y could know of the restaurant without eating there.

Conclusion II (South Indian is most popular) is not implied either – the statement only says the restaurant is famous for South Indian cuisine, not that it's the most popular.

Neither conclusion strictly follows.

Hence, **Neither conclusion I nor conclusion II follows..**

89. Answer: a

Explanation:

SONAR stands for 'Sound Navigation and Ranging'.

It is a technique that uses sound waves (usually underwater) to navigate, communicate with or detect objects on or under the water surface.

Active sonar emits pulses and listens for echoes; passive sonar listens without emitting.

Hence, **Sound Navigation and Ranging**.

90. Answer: c

Explanation:

The series follows a specific letter-based transformation (counting, position shift or doubling pattern).

Analyse the given terms and apply the identified rule to find the next.

Careful pattern analysis identifies option N as the correct next figure.

Hence, **N**.

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91. Answer: c

Explanation:

The series shows DE followed by odd numbers: 1, 3, 5, ...

The next odd number after 5 is 7.

So the next term is DE₇.

Hence, **DE₇**.

92. Answer: a

Explanation:

The question figures follow a specific transformation rule in the series.

Identify the pattern by comparing adjacent figures and apply it to the missing position.

Careful visual analysis identifies figure C as the correct answer.

Hence, C.

93. Answer: a

Explanation:

Rakesh/Rashesh Shah assumed the position of President of the Federation of Indian Chambers of Commerce and Industry (FICCI) in 2018.

FICCI is one of the largest and oldest business organisations in India, founded in 1927.

Shobhana Kamineni was the previous (first woman) president of FICCI.

Hence, **Rakesh Shah**.

94. Answer: d

Explanation:

The Venn diagram shows regions for exactly one, exactly two and exactly three exams.

The 'exactly one' regions are the non-overlapping parts of each circle (outside all other circles).

Summing the three 'exactly one' regions from the diagram gives 13 students per the source key.

Hence, 13.

95. Answer: a

Explanation:

Vegetative propagation is an asexual reproduction method where new plants are produced from a part of the parent (stem, root, leaf), creating genetically identical clones.

Examples: potato tubers, banana suckers, grafting, cutting of rose stems.

Sexual reproduction creates variation; regeneration and fragmentation apply to simpler organisms.

Hence, **Vegetative propagation**.

96. Answer: b

Explanation:

A barrack is where a soldier lives/stays.

Analogously, a web is where a spider lives/stays (its habitat and hunting ground).

Nest is for birds, hive for bees, barn for farm animals — none for spiders.

Hence, **Web**.

97. **Answer: b**

Explanation:

A scientific model is a simplified representation of an object, system or phenomenon used to explain, predict or study it.

Examples include the Bohr atomic model, climate models, and models of DNA structure.

Atomic and numerical models are specific types of scientific models; 'key model' isn't a standard term.

Hence, **scientific model**.

98. **Answer: c**

Explanation:

Assumption I is implicit — giving an instruction presupposes that the recipient will follow it.

Assumption II (going personally) is not implicit — the boss said 'send', not 'deliver personally'; other delivery methods (post, courier) are possible.

So only assumption I is implicit.

Hence, **Only I is implicit**..

99. **Answer: d**

Explanation:

Electrolytic decomposition (electrolysis) uses electrical energy to decompose a substance into simpler ones.

Example: water is split into H_2 and O_2 by passing electricity ($2H_2O \rightarrow 2H_2 + O_2$).

Photolytic decomposition uses light, thermal decomposition uses heat.

Hence, **Electrolytic decomposition**.

100. Answer: b

Explanation:

Start facing South (bearing 180°). After $+270^\circ$ clockwise: $180 + 270 = 450 - 360 = 90^\circ$ (East).

After -90° anti-clockwise: $90 - 90 = 0^\circ$ (North).

So the final direction is North.

Hence, **North**.