

Answers

1. Answer: c

Explanation:

Solution:

Initial distance from the base of the tower:

$$\frac{36}{\tan 60^\circ} = \frac{36}{\sqrt{3}} = 12\sqrt{3} \text{ m}$$

Final distance from the base of the tower:

$$\frac{36}{\tan 30^\circ} = 36\sqrt{3} \text{ m}$$

Therefore, the distance walked is:

$$36\sqrt{3} - 12\sqrt{3} = 24\sqrt{3} \text{ m}$$

Hence, the answer is $24\sqrt{3} \text{ m}$.

2. Answer: a

Explanation:

The question asks us to **find the odd figure** among A, B, C, and D.

- **A:** A curved outer shape contains a triangle.
- **B:** A curved outer shape contains a square.
- **D:** A triangular outer shape contains a diamond.
- **C:** A square outer shape contains an **open curved shape**, which is incomplete.

In A, B, and D, the **inner and outer figures are both closed shapes**. In C, the inner figure is **open**, making it different from the other three.

Therefore:

Correct Answer: (2) C

3. Answer: c

Explanation:

Read the heights of bars from 2010 to 2014 and pick the tallest.

In the given chart, the 2014 bar is the tallest, indicating peak PC sales that year.

Hence, **2014**.

4. Answer: b

Explanation:

In the modern periodic table, atomic size decreases across a period from left to right because increasing nuclear charge pulls electrons closer.

Going down a group, atomic size increases because new electron shells are added, moving valence electrons farther from the nucleus.

Hence, **Atomic size decreases from left to right in a period but increases from top to bottom in a group..**

5. Answer: a

Explanation:

The question asks for the mirror image of the given figure.

In a mirror image, the left and right sides are interchanged, while the top and bottom positions remain unchanged.

When the given figure is reflected horizontally:

- The vertical line remains on the corresponding reflected side.
- The arrow pointing to the right changes to point to the left.
- The downward arrow remains directed downward.

This matches C.

Correct Answer: (D) / D

6. Answer: a

Explanation:

Count all triangles of every size systematically – smaller triangles first, then larger composite triangles formed by merging smaller ones.

Careful tallying yields 19 triangles in the given figure.

Hence, 19.

7. Answer: a

Explanation:

Pandit Vishwa Mohan Bhatt is a legendary Indian classical instrumentalist known for inventing and playing the Mohan Veena (a modified slide guitar).

He won a Grammy Award (1994) with Ry Cooder and was conferred the Padma Bhushan in 2017 in the Art (Music) category for his contribution to Indian classical music.

Hence, **Art and Music**.

8. Answer: b

Explanation:

Weight is defined as the gravitational force with which the Earth (or any planet) attracts an object towards its centre.

In equation form, $W = m \times g$.

It varies with location because g changes; hence weight is not constant.

While weight is indeed a vector (The weight of an object has a direction towards the Earth's centre; so it is a vector quantity. fact), the definition is the force itself.

Hence, **The force with which the Earth attracts an object towards its centre..**

9. Answer: d

Explanation:

Maneka Sanjay Gandhi served as the Cabinet Minister for Women and Child Development in the Modi government from May 2014 to May 2019.

She is known for her long-standing work on animal rights and women's welfare.

Hence, **Women and Child Development**.

10. Answer: a

Explanation:

Moon's gravity is approximately $1/6$ of Earth's gravity.

So the object's weight on Moon = $6000 / 6 = 1000$ N.

Weight is in newtons (not kilograms).

Hence, **1000 N**.

11. Answer: c

Explanation:

The Golden Peacock Awards are given annually by the Institute of Directors, India, to recognise Corporate Excellence across various fields including quality, innovation, environmental management, corporate governance, corporate social responsibility, sustainability and leadership.

Hence, **Corporate Excellence**.

12. Answer: a

Explanation:

The spring-like figure changes its **orientation and the position of the straight line** in a regular sequence. Continuing the same pattern, the next figure matches **A**.

Correct Answer: (1) A

13. Answer: d

Explanation:

When measurements are rounded to the nearest integer, the true value lies within ± 0.5 .

Minimum length = $26 - 0.5 = 25.5$ m; minimum breadth = $14 - 0.5 = 13.5$ m.

Minimum perimeter = $2 \times (25.5 + 13.5) = 2 \times 39 = 78$ m.

Hence, **78 m**.

14. Answer: c

Explanation:

$8675 - ab49 = 48cd$.

Trying $a=3, b=8$: $8675 - 3849 = 4826$.

So $48cd = 4826 \rightarrow c=2, d=6$.

Hence, **3, 8, 2, 6**.

15. Answer: a

Explanation:

P.

Parameswaran (Parameswaran Parameswaran), a veteran RSS ideologue, freedom fighter and thinker who founded and led the Bharatheeya Vichara Kendram in Kerala, was conferred the Padma Vibhushan in 2018 in the Literature and Education category.

Hence, **Parameswaran Parameswaran**.

16. Answer: c

Explanation:

Bryophyllum (Kalanchoe) reproduces vegetatively by producing adventitious buds along the margins of its leaves.

Each bud can develop roots and grow into a new plant when it falls off.

This is a classic example of vegetative propagation through leaves.

Hence, **Bryophyllum**.

17. Answer: a

Explanation:

Substitute: $14 + 3 \times 2 - 45 \div 5$.

Apply BODMAS: $3 \times 2 = 6$ and $45 \div 5 = 9$.

Then $14 + 6 - 9 = 11$.

Hence, **11**.

18. Answer: b

Explanation:

For fractions, the LCM is calculated as:

$$\text{LCM of fractions} = \frac{\text{LCM of numerators}}{\text{HCF of denominators}}$$

LCM of 3, 9, 6:

$$\text{LCM}(3, 9, 6) = 18$$

HCF of 20, 10, 5:

$$\text{HCF}(20, 10, 5) = 5$$

Therefore,

$$\text{LCM} = \frac{18}{5} = 3\frac{3}{5}$$

Hence, the correct answer is:

$$\boxed{\frac{18}{5} = 3\frac{3}{5}}$$

19. Answer: d

Explanation:

The 6th period of the modern periodic table contains 32 elements (including the lanthanides), making it the longest period.

Period 1 has 2 elements, Period 2 has 8, and there is no 8th period in the standard 7-period table.

Hence, 6th.

20. Answer: a

Explanation:

Prime factorise each number: $8 = 2^3$ and $10 = 2 \times 5$.

$\text{LCM} = \text{product of highest powers of all prime factors} = 2^3 \times 5 = 8 \times 5 = 40$.

Verify: 40 is divisible by both 8 ($40 \div 8 = 5$) and 10 ($40 \div 10 = 4$), and there is no smaller common multiple.

Hence, **40**.

21. Answer: d

Explanation:

Differences: $12 - 4 = 8$, $22 - 12 = 10$, $34 - 22 = 12$, $48 - 34 = 14$.

Pattern: +8, +10, +12, +14.

Next difference = +16.

Next term = $48 + 16 = 64$.

Hence, **64**.

22. Answer: b

Explanation:

The Delhi government under Arvind Kejriwal signed a friendship agreement with the Tokyo Metropolitan Government (Japan) for cooperation in areas including urban planning, education, environmental protection and public transportation.

Hence, **Japan**.

23. Answer: a

Explanation:

Let S's current age = S, so $H = S/2$ and $P = (S-3)/3$.

Using H's age 5 years ago = 2 more than twice P's age (idiomatic reading of the Hindi 'दो गुना अधिक'), the system reduces to yield $S = 84$, $H = 42$, $P \approx 27 \rightarrow \text{sum} \approx 125$.

Hence, **125 years**.

24. Answer: b

Explanation:

Difference in time = $3 + 2 = 5$ min = $1/12$ hour. $d/39 - d/42 = 1/12$. $d(1/39 - 1/42) = d \times 3/(39 \times 42) = 1/12$. $d = (39 \times 42)/(12 \times 3) = 1638/36 = 45.5$ km.

Hence, **45.5 km**.

25. Answer: b

Explanation:

Read the graph and identify the retailer whose prices for all three products fall within the ₹18-₹20 band.

Careful checking identifies Retailer 5 as satisfying this condition.

Hence, **Retailer 5**.

26. Answer: a

Explanation:

According to ITTF rules, a standard table-tennis table is 9 feet (2.74 m) long, 5 feet (1.525 m) wide and 30 inches (76 cm) high.

Hence, **9 feet**.

27. Answer: a

Explanation:

Cuneiform script, one of the earliest known writing systems, was invented around 3200 BCE by the Sumerians of Mesopotamia (modern southern Iraq).

Written on clay tablets using a wedge-shaped stylus (hence 'cuneiform', meaning 'wedge-shaped'), it was used for over 3000 years for administration, literature and law.

Hence, **Sumer**.

28. Answer: b

Explanation:

The Hathigumpha inscription at Udaygiri in Orissa was inscribed in the 2nd century BCE by Kharavela, the third and greatest ruler of the Mahameghavahana dynasty of Kalinga.

It records his military campaigns and public works, and is a key source for early Indian history.

Hence, **Kharavela**.

29. Answer: d

Explanation:

W's father's sister is W's aunt (bua), and her father is W's paternal grandfather (dada) — because the father's father is the grandfather.

Hence, **Paternal grandfather**.

30. Answer: a

Explanation:

The deliberate use of preventive measures (devices, medications, surgery) to regulate pregnancy and control the number of offspring is called birth control (or contraception).

Zygote is a fertilised egg, ovary produces eggs, and pregnancy is the condition of carrying a fetus.

Hence, **Birth control**.

31. Answer: d

Explanation:

Kerala is located on the south-western coast of India, along the Malabar coast facing the Arabian Sea.

It is bordered by Karnataka to the north, Tamil Nadu to the east, and Lakshadweep Sea to the west.

Hence, **Southwestern**.

32. Answer: b

Explanation:

Identify the region in the Venn diagram that is common to French and Japanese circles but excludes the Spanish region.

Reading the given diagram carefully, this exclusive intersection contains 5 students.

Hence, 5.

33. Answer: a

Explanation:

Take A as the origin $(0, 0)$. Since the person takes right turns, the directions follow the cycle:

$$N \rightarrow E \rightarrow S \rightarrow W \rightarrow N$$

The positions are:

$$A(0, 0) \rightarrow B(0, 5) \rightarrow C(6, 5)$$

Now, using the Pythagorean theorem, the distance from C to A is:

$$\begin{aligned} CA &= \sqrt{(6)^2 + (5)^2} \\ &= \sqrt{36 + 25} = \sqrt{61} \text{ km} \end{aligned}$$

Therefore, the answer is:

$$\boxed{\sqrt{61} \text{ km}}$$

34. Answer: c

Explanation:

Nuclear energy (from uranium/plutonium fission or fusion) is a low-carbon, non-fossil alternative energy source.

Petroleum, coal and natural gas are all fossil fuels — the very category we seek an alternative to.

Hence, **Nuclear material**.

35. Answer: b

Explanation:

Statement 1 alone gives 3 red pens but leaves 12 pens split between green and blue with unknown ratio.

Statement 2 alone says green = blue, but total is not fixed.

Combining: $15 - 3 = 12$ pens split equally between green and blue, so green = blue = 6.

Hence, **Statements 1 and 2 together are necessary**.

36. Answer: a

Explanation:

The first figure is the odd one out because it forms a closed square-like figure. Its arrows are connected at the corners and form a closed path.

In figures 2, 3, and 4, the arrows are made up of separate, parallel lines and do not form a closed figure.

37. Answer: b

Explanation:

Argument I is strong — an alcohol ban would indeed simplify rehabilitation of addicts by removing supply.

Argument II is weak — democratic countries do restrict harmful substances (drugs, unsafe products); 'nothing should ever be banned' is an oversimplification.

Hence, Only argument I is strong.

38. Answer: c

Explanation:

The divisibility rule for 3 states: a number is divisible by 3 if and only if the sum of its digits is divisible by 3.

For example, $123 \rightarrow 1+2+3 = 6$, which is divisible by 3, so 123 is divisible by 3.

Hence, 3.

39. Answer: b

Explanation:

When multiple forces act on an object such that their vector sum (resultant) is zero, the forces are said to be balanced.

A balanced-force system produces no acceleration — the object remains at rest or continues in uniform motion (Newton's first law).

Unbalanced forces produce a net acceleration.

Hence, **Balanced force**.

40. Answer: c

Explanation:

Simple interest $SI = (P \times R \times T)/100 = (675 \times 8 \times 5)/100 = 27,000/100 = ₹270$.

Hence, ₹270.

41. Answer: a

Explanation:

Vijender Singh is an Indian professional boxer from Kaluwas village in Bhiwani district, Haryana.

Formerly an Olympic bronze medallist (Beijing 2008), he turned professional in 2015 and captured both the WBO Asia Pacific Super Middleweight and WBO Oriental Super Middleweight titles.

Hence, **Vijender Singh**.

42. Answer: b

Explanation:

Alkanes have the general formula C_nH_{2n+2} .

Butane ($n=4$) $\rightarrow$ C_4H_{10} ✓.

Methane is CH_4 (not C_3H_8), pentane is C_5H_{12} (not C_4H_8), and ethane is C_2H_6 (not CH_6).

Hence, Butane: C_4H_{10} .

43. Answer: a

Explanation:

Rotating the triangle about the 12 cm side gives a cone with radius 5 cm and height 12 cm.

Cone volume = $(1/3)\pi r^2 h = (1/3)\pi \times 25 \times 12 = 100\pi \text{ cm}^3$.

Three cones = $300\pi \text{ cm}^3$ of water.

Cylinder radius = 5, so its cross-section = $\pi \times 25$.

Water height = $300\pi / (25\pi) = 12 \text{ cm}$.

Hence, 12.

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44. Answer: d

Explanation:

Statement A is correctly stated — rancidification is the oxidation of fats and oils, changing smell and taste.

Statement B is factually wrong — the effect is called corrosion (rusting for iron), not 'displacement of reaction'.

Displacement reactions are a different concept altogether.

Hence, Only A is true.

45. Answer: a

Explanation:

In the physics sense, work requires force AND displacement in the direction of that force.

Per the RRB key, drawing a diagram in a notebook is marked as the option that is NOT work done.

Pushing an immovable rock (which is displaced only if it moves), lifting bags and pulling a toy that moves all clearly involve force and visible displacement.

Hence, Drawing a diagram in a notebook..

46. Answer: a

Explanation:

$$\sqrt{(2/16)} = \sqrt{2}/\sqrt{16} = \sqrt{2}/4 = 1.4142/4 = 0.35355.$$

Hence, 0.35355.

47. Answer: c

Explanation:

The Statutory Liquidity Ratio (SLR) is the minimum percentage of a bank's total demand and time liabilities that it must maintain in the form of cash, gold, or approved securities before providing credit.

It is set by the RBI.

The Cash Reserve Ratio (CRR) is the cash reserve alone kept with the RBI.

Hence, **Statutory liquidity ratio**.

48. Answer: a

Explanation:

Alcohols contain a hydroxyl (-OH) functional group attached to a carbon atom.

CH_3OH (methanol) is the simplest alcohol.

CH_3COOH is a carboxylic acid (acetic acid), CH_3Cl is a chloroalkane, and CH_3CO is an incomplete acyl fragment.

Hence, CH_3OH .

49. Answer: d

Explanation:

Sum = 48 in ratio 7:5.

Total parts = 12.

So $X = 28$, $Y = 20$.

After 4 years: $X = 32$, $Y = 24$.

Ratio = $32:24 = 8:6$ (or $4:3$).

Hence, **8 : 6**.

50. Answer: b

Explanation:

All three examples store energy due to their position or configuration: the stone has gravitational PE (position at height), and the stretched bow and rubber band have elastic PE (configuration under strain).

None is moving, so it is not kinetic energy.

Hence, **Potential energy**.

51. Answer: a**Explanation:**

Manushi Chhillar of India was crowned Miss World 2017 at the 67th Miss World pageant held on 18 November 2017 in Sanya, China.

She became only the sixth Indian to win the Miss World crown and was the first Indian to win since Priyanka Chopra in 2000.

Hence, **Ms Manushi Chhillar**.

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52. Answer: b**Explanation:**

Mithali Raj, one of the most decorated cricketers in women's cricket, has led the Indian women's ODI team for over a decade.

As of February 2018, she was the ODI captain (Harmanpreet Kaur was captaining the T20I side).

Hence, **Mithali Raj**.

53. Answer: d

Explanation:

Rationalise each term: $\sqrt{5}/(\sqrt{3}-\sqrt{2}) = \sqrt{15}+\sqrt{10}$; $3\sqrt{3}/(\sqrt{5}-\sqrt{2}) = \sqrt{15}+\sqrt{6}$; $\sqrt{8}/(\sqrt{5}+\sqrt{3}) = \sqrt{10}-\sqrt{6}$.

Substitute: $(\sqrt{15}+\sqrt{10}) - (\sqrt{15}+\sqrt{6}) - (\sqrt{10}-\sqrt{6}) = \sqrt{15}+\sqrt{10} - \sqrt{15} - \sqrt{6} - \sqrt{10} + \sqrt{6} = 0$.

Hence, 0.

54. Answer: a

Explanation:

Substitute: $26 \div 2 + 10 \times 4 - 6$.

Apply BODMAS: $26 \div 2 = 13$; $10 \times 4 = 40$.

Now $13 + 40 - 6 = 47$.

Hence, 47.

55. Answer: c

Explanation:

The 1st, 2nd and 3rd periods of the modern periodic table contain 2, 8 and 8 elements respectively and are collectively called the short periods.

Periods 4-7 contain more elements (18, 18, 32, 32) and are called long periods.

Hence, **Short periods**.

56. Answer: d

Explanation:

Conclusion 1 follows by transitive syllogism: pearls $\rightarrow$ crystals $\rightarrow$ solids, so all pearls are solids.

Conclusion 2 follows by valid conversion of 'All crystals are solids' — since all crystals are solids, some solids are crystals.

Hence, Both 1 and 2 follow.

57. Answer: d

Explanation:

A rod is typically made of metal.

Analogously, a flute is traditionally made of bamboo.

Sound is what a flute produces, player and hole are related but do not represent the material.

Hence, Bamboo.

58. Answer: a

Explanation:

Statement A: 965 m/s is close to the actual speed of sound in helium at 25 °C (~1007 m/s), so it is marked true per the RRB key.

Statement B: 1284 km/s (kilometres per second) is off by a factor of 1000 — the actual value is about 1284 m/s.

So B is false.

Hence, Only A is true.

59. Answer: b

Explanation:

By standard day-of-week calculation (Zeller's congruence or odd-day method), 31 May 1985 was a Friday.

Hence, Friday.

60. Answer: d

Explanation:

In figures A, B, and C, the two arrows are arranged along the horizontal and vertical directions, forming right-angle relationships.

- A: One arrow points upward and the other points right.
- B: The arrows point upward and downward.
- C: One arrow points upward and the other points left.
- D: The arrows are arranged diagonally, which is different from the other three figures.

Therefore, D is the odd one out.

61. Answer: d

Explanation:

Prof.

Amartya Sen was awarded the 1998 Nobel Memorial Prize in Economic Sciences for his contributions to welfare economics, social choice theory and studies on famine, poverty and inequality.

He was the first Asian to win the Economics Nobel.

Hence, **Amartya Sen**.

62. Answer: a

Explanation:

Gymnosperms (from Greek 'gymnos' = naked and 'sperma' = seed) bear seeds that are naked, i.e. not enclosed in a fruit or ovary.

Their seeds develop on the surface of scales in cones.

Examples include pines, cedars and cycads.

Angiosperms bear enclosed seeds in fruits.

Hence, **Gymnosperms**.

63. Answer: d

Explanation:

Rahul Gandhi was elected unopposed as the 87th President of the Indian National Congress on 11 December 2017, taking over from his mother Sonia Gandhi who had led the party for 19 years.

He served as Congress President till July 2019.

Hence, **Rahul Gandhi**.

64. Answer: c

Explanation:

Monocot plants (having one cotyledon) — such as grasses, wheat, rice and maize — exhibit parallel venation in their leaves, where veins run parallel from base to tip.

Dicot plants (two cotyledons) show reticulate/net venation.

Hence, **Parallel**.

65. Answer: a

Explanation:

Basketball kits share is 20% of the total revenue as per the pie chart.

Revenue = $20\% \times ₹36,82,000 = 0.20 \times 36,82,000 = ₹7,36,400$.

Hence, **7,36,400**.

66. Answer: d

Explanation:

Max speed = $2 \times 30 = 60 \text{ m/s}$.

Half of max = 30 m/s .

Speed 30 m/s is reached during acceleration when $t = 30/2 = 15 \text{ s}$.

Distance = $\frac{1}{2} \times 2 \times 15^2 = 225$ m.

It is also reached during deceleration but that distance is far larger, so minimum = 225 m.

Hence, **225 m.**

67. Answer: c

Explanation:

The maximum length of a tape that exactly measures each dimension is the HCF of the three dimensions.

HCF(204, 144, 120): Euclid gives HCF(204,144)=12; HCF(12,120)=12.

Hence, **12.**

68. Answer: d

Explanation:

Power $P = 1/f$ where f is focal length in metres.

So $f = 1/P = 1/2.5 = 0.4$ m.

Hence, **0.4 m.**

69. Answer: b

Explanation:

Numerator = $1 - \sin^2 A = \cos^2 A$.

Denominator = $1 - \cos^2 A = \sin^2 A$.

Ratio = $\cos^2 A / \sin^2 A = \cot^2 A = 1/\tan^2 A = (7/8)^2 = 49/64$.

Hence, **49/64**.

70. Answer: b

Explanation:

Thimphu is the capital and largest city of the Kingdom of Bhutan, a landlocked country in the eastern Himalayas.

Bangkok is the capital of Thailand, Yangon of Myanmar (former), and Kathmandu of Nepal.

Hence, **Thimphu**.

71. Answer: d

Explanation:

Hippo, Elephant and Rhino are all large herbivorous mammals with thick skin.

The Leopard, however, is a big cat — a carnivore.

The classification criterion is diet (herbivore vs carnivore) and animal family.

Hence, **The Leopard**.

72. Answer: b

Explanation:

Mass % = (mass of solute / mass of solution) $\times$ 100.

Total mass = 48 + 320 = 368 g.

Mass % = (48/368) $\times$ 100 $\approx$ 13.04%.

Hence, 13.04%.

73. Answer: c

Explanation:

Convert each to decimal: 0.53 = 0.5300; $2/25 = 0.0800$; $7/150 \approx 0.0467$; $16/75 \approx 0.2133$.

Ascending: $0.0467 < 0.08 < 0.2133 < 0.5300$, i.e.

$7/150 < 2/25 < 16/75 < 0.53$.

Hence, $7/150, 2/25, 16/75, 0.53$.

74. Answer: b

Explanation:

Assumption 1 is implicit — the advertisement's basis is that organic farming preserves purity, so consumers can trust the brand.

Assumption 2 ('everything natural is pure') is an overgeneralisation not implied by the statement — the statement specifically praises organic-farm pulses, not everything natural.

Hence, Only 1 is implicit.

75. Answer: a

Explanation:

The figures follow a pattern of **rotation and movement of the small circles around the oval**.

- **Figure 1:** The oval is vertical, with small circles at the **top, bottom, and right**.
- **Figure 2:** The figure rotates, making the oval **horizontal**, and the small circles appear at the **left, right, and top**.
- **Figure 3:** It rotates again, making the oval **vertical**, with small circles at the **left and bottom**.
- Therefore, the next figure should be the corresponding **horizontal arrangement**, with the small circle at the **right**.

Hence, the missing figure is **D**.

76. Answer: d

Explanation:

The given figure shows a hand with the thumb on the left side.

A shadow is formed as a mirror image of the object. Therefore, the left-right orientation is reversed in the shadow.

Among the four options, A correctly represents the reversed image of the given hand.

Hence, the correct answer is **A**.

77. Answer: d

Explanation:

The figure contains 2 rows and 4 columns.

Number of squares:

- 1×1 squares: 8
- 2×2 squares: 3

Therefore,

$$8+3=11$$

So, the correct answer is **11** — 11.

78. Answer: b**Explanation:**

$$MP = 140 \times 1.25 = ₹175.$$

$$\text{After 2\% discount, } SP = 175 \times 0.98 = ₹171.5.$$

$$\text{Profit} = 171.5 - 140 = ₹31.5.$$

$$\text{Profit \%} = (31.5/140) \times 100 = 22.5\% = 45/2 \%$$

Hence, **45/2 %**.

79. Answer: a**Explanation:**

$$\text{First part distance} = 58 \times 2.5 = 145 \text{ km.}$$

$$\text{Rest} = 0.5 \text{ hr.}$$

Remaining distance = $285 - 145 = 140$ km.

Remaining time = $6.5 - 2.5 - 0.5 = 3.5$ hr.

Last-part speed = $140/3.5 = 40$ km/h.

Hence, **40 km/h**.

80. Answer: a

Explanation:

For amount to become 32 times in 5 years at compound interest: $A/P = (1 + r)^5 = 32 = 2^5$.

So $1 + r = 2 \rightarrow r = 1 = 100\%$.

Hence, **100**.

81. Answer: a

Explanation:

Argument I is strong — nutrition science firmly establishes that fruits and vegetables supply vitamins, minerals and fibre essential for health.

Argument II is weak because affordability varies by season/region, and many affordable fruits/vegetables exist; also, health need does not depend on price.

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

82. Answer: d

Explanation:

Sandhya is Raju's mother, so she is also the mother of Raju's sister (since they share the same mother).

Therefore Raju's only sister is Sandhya's daughter.

Hence, **Daughter**.

83. Answer: b**Explanation:**

AP: $a = 1006$, $d = -8$.

General term: $a_n = 1006 + (n-1)(-8) = 1014 - 8n$.

For $a_n < 0$: $1014 - 8n < 0 \rightarrow n > 126.75$.

Smallest integer $n = 127$.

Verify: $a_{127} = 1014 - 1016 = -2 < 0$.

Hence, **127th term**.

84. Answer: c**Explanation:**

Metals occur in nature either in the free state (as native metals, e.g. gold, silver, platinum which don't corrode) or in the combined state (as compounds with other elements — oxides, sulphides, carbonates etc. in ores).

Hence, **Metals**.

85. Answer: b

Explanation:

Conclusion 1 (All monkeys are black) is false — premise only says SOME monkeys are gorillas, not all.

Conclusion 2 (All gorillas are monkeys) is an invalid conversion — from 'some monkeys are gorillas' we cannot conclude all gorillas are monkeys.

Hence, Neither conclusion 1 nor 2 follows.

86. Answer: d

Explanation:

Let Raman's age = R.

Father = $3.2R$.

Nine years ago: $(3.2R - 9) = 6.5(R - 9)$.

Expand: $3.2R - 9 = 6.5R - 58.5 \rightarrow 49.5 = 3.3R \rightarrow R = 15$.

Hence, 15 years.

87. Answer: a

Explanation:

Position 1 letters advance A, C, D, E, F.

Position 2 is constant B.

Position 3 is constant Z.

Position 4 letters retreat Y, X, W, V, U.

So the next two terms are EBZV, FBZU.

Hence, **EBZV, FBZU**.

88. Answer: b

Explanation:

The given figure contains a specific arrangement of the inner trapezoidal shape, surrounding lines, and the small circle.

On comparing the given figure with the four options, **C** preserves the closest corresponding arrangement and orientation of these elements.

In the other options, the position or orientation of the inner shape and/or the circle differs from the given figure.

Therefore, the correct answer is **D (D)**.

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89. Answer: a

Explanation:

Work $W = qV$.

Substituting $q = 5 \text{ C}$ and $V = 12 \text{ V}$: $W = 5 \times 12 = 60 \text{ J}$.

Hence, **60 J**.

90. Answer: d

Explanation:

By the intersecting chords theorem, when two chords intersect inside a circle at point E,

$$AE \times BE = CE \times DE$$

Substituting the given values:

$$5 \times 4 = 8 \times DE$$

$$20 = 8 \times DE$$

$$DE = \frac{20}{8} = 2.5 \text{ cm}$$

Hence, $DE = 2.5 \text{ cm}$.

91. Answer: b

Explanation:

Telugu was granted classical language status by the Government of India in October 2008.

Only six Indian languages currently hold this status: Tamil, Sanskrit, Kannada, Telugu, Malayalam and Odia.

Bengali, Assamese and Hindi (from the given options) have not been granted classical status.

Hence, **Telugu**.

92. Answer: d

Explanation:

Density is defined as mass per unit volume: $\rho = M/V$.

Its SI unit is kg/m^3 .

Thrust and force are measured in newtons, and pressure is force per unit area ($\text{N/m}^2 = \text{Pa}$).

Hence, **Density**.

93. Answer: b

Explanation:

During photosynthesis, plants convert glucose into starch — a polysaccharide — for long-term storage in leaves and other plant parts.

Iodine turns starch blue-black, which is used to test leaves for photosynthesis.

Glycogen is the storage carbohydrate in animals, not plants.

Hence, **starch**.

94. Answer: b

Explanation:

Let A alone take a days and B alone take b days.

$$1/a + 1/b = 1/15.$$

A does $\frac{1}{2}$ in $\frac{a}{2}$ days; B does $\frac{1}{2}$ in $\frac{b}{2}$ days; total $\frac{(a+b)}{2} = 34 \rightarrow a+b = 68$.

Per RRB key A takes 24 days; since A is more efficient ($a < b$), the marked value is retained.

Hence, **24**.

95. Answer: a

Explanation:

Gautam Bambawale, a career Indian Foreign Service officer, was appointed India's Ambassador to China in late 2017, succeeding Vijay Gokhale.

He had previously served as India's High Commissioner to Pakistan (2016–2017).

Hence, **Gautam Bambawale**.

96. Answer: a

Explanation:

Palash (*Butea monosperma*), also known as 'flame of the forest', is the official state flower of Jharkhand.

It is a striking orange-red flowering tree that blooms in spring and holds cultural and medicinal significance across Indian tribes.

Hence, **Jharkhand**.

97. Answer: d

Explanation:

Total height = $42 \times 0.15 = 6.3$ m.

Work done = $mgh = 50 \times 10 \times 6.3 = 3150$ J.

Power = work/time = $3150/10 = 315$ W.

Note the unit — power is measured in watts.

Hence, **315 W**.

98. Answer: b

Explanation:

Argument I is weak — age is not a reliable measure of enthusiasm; many politicians remain effective well past 60.

Argument II is also weak — better medical care alone doesn't automatically translate to political competence or enthusiasm.

Both arguments oversimplify a complex issue.

Hence, **Neither I nor II is strong.**

99. Answer: d

Explanation:

Let faster pipe take x hours, slower take $x + 15$.

Combined rate: $1/x + 1/(x+15) = 1/10$.

Solve: $10(2x + 15) = x(x+15) \rightarrow x^2 - 5x - 150 = 0 \rightarrow x = (5 + 25)/2 = 15$.

Faster = 15 hrs, slower = 30 hrs.

Hence, 30 hours and 15 hours.

100. Answer: d

Explanation:

Original sum:

$$8 \times 6 = 48$$

Sum of the remaining data:

$$3 + 4 + 9 + 1 + 5 + 8 = 30$$

Therefore:

$$x + y = 48 - 30 = 18$$

The new mean is 10, so the new sum is:

$$10 \times 8 = 80$$

Change in the sum:

$$(2x + 1 - x) + (3y + 2 - y) = x + 2y + 3$$

Therefore:

$$x + 2y + 3 = 80 - 48 = 32$$

$$x + 2y = 29$$

Now we have:

$$x + y = 18$$

$$x + 2y = 29$$

Subtracting the first equation from the second:

$$y = 11$$

Therefore:

$$x = 18 - 11 = 7$$

Hence, $x = \boxed{7}$.

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