

Answers

1. Answer: d

Explanation:

15 is correct.

In a bar graph, each vertical bar's height corresponds to the value plotted on the Y-axis for the category marked on the X-axis. To answer a "how many units in year Y" question, we locate the bar labelled with that year and read off the Y-axis grid line that aligns with its top.

Locating the bar for 2005 and projecting its top onto the Y-axis, the reading comes out at 15 units. The chart's scale shows that this bar is taller than those of years marked at 10 but noticeably shorter than the 20- and 25-unit bars, confirming the value as 15.

2. Answer: c

Explanation:

Only Assumption I is implicit. is correct.

An implicit assumption is an unstated idea that the speaker must take for granted for the statement to make sense. We examine each assumption and ask whether the statement can hold without it.

Assumption I says timely arrival matters for catching a flight. The whole point of the complaint — that being late caused the flight to be missed — only has force if punctuality is necessary; so this idea is clearly built into the statement. Assumption II claims the route to the airport is always congested, which is a sweeping generalisation; the statement only reports one occasion of heavy traffic and never asserts it is a permanent feature, so this is not implicit.

3. Answer: d

Explanation:

Only 1 follows is correct.

A course of action "follows" a statement only if it is a direct, workable step toward resolving the problem described. Each proposed action is tested against this requirement.

Action 1 proposes that agents coordinate with the airlines. Since the shortage of cargo space is controlled by airlines, cooperating with them to secure more space is a direct, practical remedy — this action follows. Action 2 proposes to study why air exports are rising. Understanding causes does not create any new cargo space and does not clear the existing backlog; it is an analytical exercise, not a problem-solving step, so it does not follow.

4. Answer: b

Explanation:

Mother is correct.

Blood-relation problems are solved by unwinding one link at a time starting from the speaker. Here Nita is the speaker and the chain is "my father's only daughter's daughter".

"My father's only daughter" must be Nita herself, because Nita is her father's child and there is no other daughter. The next link is "the daughter of (my father's only daughter)", i.e. Nita's own daughter. The girl in the picture is therefore Nita's daughter, which makes Nita her mother. The "sister" and "cousin" options fail because they would require a sibling in the chain, and "aunt" would need a niece link, none of which appear here.

5. Answer: d

Explanation:

Humpy Koneru is correct.

In chess, FIDE awards the open Grandmaster (GM) title, the highest title in the game, separately from the women-only Woman Grandmaster (WGM) title.

Koneru Humpy became the first Indian woman to earn the Grandmaster title in 2002, at the age of 15.

S. Vijayalakshmi was India's first Woman Grandmaster (WGM) and the first Indian woman International Master, which is a different title; Kruttika Nadig and Padmini Rout earned their titles later.

Hence, the first Indian woman Grandmaster is Humpy Koneru.

Note: The official RRB answer key marks S. Vijayalakshmi, who was the first Indian Woman Grandmaster (WGM). For the Grandmaster title itself, the correct answer is Koneru Humpy (2002), so the answer here is set to Humpy Koneru.

6. Answer: c

Explanation:

25% is correct.

Profit percentage is calculated on the cost price: $\text{Profit \%} = \frac{\text{SP} - \text{CP}}{\text{CP}} \times 100$.

Step 1 — CP = ₹ 800 and SP = ₹ 1000, so the profit is ₹ 1000 - ₹ 800 = ₹ 200.

Step 2 — Profit % = $\frac{200}{800} \times 100 = 25\%$. Dividing by the selling price instead would wrongly give 20%.

Hence, the profit percentage is 25%.

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Note: RRB did not award marks for this question in the official key.

7. Answer: d

Explanation:

Nirmala Sitharaman is correct.

The Union Minister of Defence heads the Ministry of Defence and is responsible for the Army, Navy, Air Force and defence policy. The question is dated to the October 2018 examination.

At that time Nirmala Sitharaman was the Defence Minister, having taken charge on 3 September 2017 and holding the portfolio until the end of the first Modi government in May 2019. Manohar Parrikar had served earlier (2014–2017) before returning to Goa as Chief Minister, A. K. Antony held the portfolio under UPA (2006–2014), and K. C. Pant served much earlier in the 1980s, so none of them were in charge in October 2018.

8. Answer: d

Explanation:

b is correct.

The four figures are the letters N (a), E (b), A (c) and Z (d).

N, A and Z are each drawn with three straight strokes and each contains a slanting stroke.

E is drawn with four strokes, all of them only horizontal or vertical, with no slanting stroke.

Hence, figure b (the letter E) is the odd one out.

9. Answer: d

Explanation:

C is correct.

Each figure is a circle cut by a straight line, with two dots inside it.

In A, B and D the two dots lie on opposite sides of the line.

In C the line is horizontal and both dots lie on the same side of it.

Hence, figure C is the odd one out.

10. Answer: c

Explanation:

Neither conclusion 1 nor 2 follows. is correct.

In syllogism, a conclusion follows only if it is forced by the given statements for every possible arrangement of the sets involved. The chain here is Mountains $\subset$ Metals $\subset$ Elements, so every mountain is an element and every metal is an element.

Conclusion 1 claims all elements are mountains, which is the reverse of the chain. The statements do not force this — there can be elements that are not metals and metals that are not mountains. Conclusion 2 claims all elements are metals, which is also the reverse of statement II; the inclusion only guarantees that all metals are elements, not the other way round. So neither conclusion is forced.

11. Answer: a

Explanation:

$3\frac{16}{23}$ hours is correct.

In pipe and cistern problems, work the volume filled per hour by each pipe, add inlet rates and subtract outlet rates. Treat the full tank as 1 unit of work.

Step 1 – the combined rate of the two inlets is $\frac{1}{6} + \frac{1}{8} = \frac{4+3}{24} = \frac{7}{24}$ per hour. Running them for 1 hour fills $\frac{7}{24}$, leaving $1 - \frac{7}{24} = \frac{17}{24}$ to be filled.

Step 2 – with all three pipes open, the net rate is $\frac{1}{6} + \frac{1}{8} - \frac{1}{10} = \frac{20+15-12}{120} = \frac{23}{120}$ per hour.

Step 3 – time to fill the remainder is $\frac{17/24}{23/120} = \frac{17}{24} \times \frac{120}{23} = \frac{17 \times 5}{23} = \frac{85}{23} = 3\frac{16}{23}$ hours.

12. Answer: d

Explanation:

$\frac{1}{6}$ is correct.

In a right triangle only one angle is 90° , and the remaining two angles sum to 90° . With $\angle B = 90^\circ$, angle A fully determines the trigonometric ratios without needing side lengths.

Step 1 – standard values at $A = 30^\circ$ are $\cos 30^\circ = \frac{\sqrt{3}}{2}$, $\sin 30^\circ = \frac{1}{2}$, $\tan 30^\circ = \frac{1}{\sqrt{3}}$.

Step 2 – squaring gives $\cos^2 A = \frac{3}{4}$, $\sin^2 A = \frac{1}{4}$, $\tan^2 A = \frac{1}{3}$.

Step 3 – $\frac{3}{4} - \frac{1}{4} - \frac{1}{3} = \frac{1}{2} - \frac{1}{3} = \frac{3-2}{6} = \frac{1}{6}$.

13. Answer: b

Explanation:

China is correct.

A democratic country is one in which the government is chosen through free and competitive multi-party elections and holds office at the pleasure of the electorate. Of the four options, India, Sri Lanka and the United States of America all conduct periodic multi-party elections and are recognised as democracies.

China, officially the People's Republic of China, is a one-party state under the Communist Party of China. It does not permit competitive multi-party elections at the national level, so it is classified as a non-democratic country in standard civics references. Hence among the given options, China is the one that is not a democratic country.

14. Answer: d

Explanation:

16 is correct.

The figure is a kite with both diagonals drawn, and a small rhombus at the centre whose corners lie on the diagonals.

Step 1 – The two diagonals divide the kite into 4 large right triangles.

Step 2 – Each diagonal also splits the kite into two halves, giving 4 more triangles (upper, lower, left and right halves).

Step 3 – Inside the small rhombus, the diagonals form 4 small triangles.

Step 4 – Each diagonal also splits the small rhombus into two halves, giving 4 more triangles.

Hence, the total is $4 + 4 + 4 + 4 = 16$ triangles.

15. Answer: b

Explanation:

0.5 A is correct.

Electric current is the rate at which charge flows through a conductor, defined by $I = \frac{Q}{t}$, where Q is the charge in coulombs and t is the time in seconds. The SI unit of current is the ampere (A).

Step 1 — convert the given time into seconds: $t = 10 \text{ min} = 10 \times 60 = 600 \text{ s}$.

Step 2 — apply the formula: $I = \frac{Q}{t} = \frac{300}{600} = 0.5 \text{ A}$. Choosing 5 A or 50 A corresponds to forgetting to convert minutes to seconds, which is the most common slip in this type of problem.

16. Answer: b

Explanation:

10 N is correct.

Weight is the gravitational force on a body, $W = mg$, and depends on the local gravitational acceleration g . The Moon's gravity is approximately one-sixth of Earth's, so an object's weight on the Moon is roughly one-sixth of its weight on Earth; the mass stays unchanged.

Step 1 — apply the one-sixth ratio to the Earth weight: $W_{\text{moon}} = \frac{W_{\text{earth}}}{6} = \frac{60}{6} = 10 \text{ N}$.

Options with "kg" and "KG" are wrong on units alone — weight is a force measured in newtons, not kilograms — and 360 N is six times the Earth weight, the reverse of the correct direction.

17. Answer: a

Explanation:

12 is correct.

A Pythagorean triple is a set of three positive integers (a, b, c) satisfying $a^2 + b^2 = c^2$, with c the largest. Given $c = 37$, we need positive integers a and b with $a^2 + b^2 = 37^2 = 1369$.

Step 1 — test values: $12^2 = 144$ and $35^2 = 1225$, and $144 + 1225 = 1369$. So $(12, 35, 37)$ is a valid primitive Pythagorean triple.

Step 2 — the minimum value in this triple is 12. Other options fail the sum-of-squares check with 37: with 25 the partner $\sqrt{1369 - 625} = \sqrt{744}$ is not an integer; with 17 similarly $\sqrt{1369 - 289} = \sqrt{1080}$ is not; and 5 is too small to pair with any integer below 37.

18. Answer: d

Explanation:

Plasma is correct.

Plasma is the fourth state of matter, formed when a gas is heated or energised enough to ionise its atoms into free electrons and positive ions. The free electrons recombine with ions and emit photons of specific wavelengths, which is why plasma glows with a colour characteristic of the gas used.

This is the principle behind neon signs (orange-red), mercury-vapour lamps (bluish) and sodium-vapour lamps (yellow). Liquids, solids and semi-solids do not naturally glow with a gas-specific colour because they do not contain the free ion-electron plasma that produces discrete emission lines; they can only glow when heated to incandescence, which is a continuous spectrum, not a characteristic colour.

19. Answer: d

Explanation:

45 km is correct.

In speed-time-distance problems with a fixed distance, the key identity is $\text{distance} = \text{speed} \times \text{time}$. Different speeds take different times, and the difference between them equals the sum of the two reported deviations from the scheduled time.

Step 1 — let the on-time duration be T hours and the distance be d . Then $\frac{d}{60} = T - \frac{3}{60}$ and $\frac{d}{54} = T + \frac{2}{60}$.

Step 2 — subtract to eliminate T : $\frac{d}{54} - \frac{d}{60} = \frac{5}{60} = \frac{1}{12}$.

Step 3 — combine the left side over LCM 540: $d \left(\frac{60 - 54}{54 \times 60} \right) = \frac{6d}{3240} = \frac{d}{540}$, so $d = \frac{540}{12} = 45$ km.

20. Answer: d

Explanation:

15 is correct.

In a pie chart each sector represents a share of the whole, and the value in any sector equals the chart's total multiplied by that sector's fractional share. The sector shares are given as percentages that add up to 100.

Step 1 — read the sector labelled bank 'F' from the chart; its share is 5% of the total NPA.

Step 2 — compute the NPA of bank F: $\text{NPA}_F = \frac{5}{100} \times 300 = 15$ lakh crore. The distractors 10 and 20 correspond to other sectors of the same chart and 5 is the percentage share rather than the value in lakh crore — a common slip when the reader forgets to multiply by the total.

21. Answer: a

Explanation:

Sugar is correct.

A solution conducts electricity when it contains free ions that can migrate and carry charge. Substances whose aqueous solutions dissociate into ions are called electrolytes; those that do not dissociate are non-electrolytes.

Sodium chloride (NaCl) and calcium chloride (CaCl_2) are ionic salts that dissociate fully in water and are strong electrolytes. Sodium hydroxide (NaOH) is a strong base and dissociates completely into Na^+ and OH^- ions, so it too conducts.

Sugar (sucrose, $\text{C}_{12}\text{H}_{22}\text{O}_{11}$) is a covalent molecular compound. It dissolves in water as neutral molecules without producing ions, which is why a sugar solution does not conduct electricity.

22. Answer: a

Explanation:

35° is correct.

Two facts drive the solution: the three angles of a triangle sum to 180° , and the base angles of an isosceles triangle are equal.

Step 1 — because BC is extended to D , $\angle ACD$ is supplementary to $\angle ACB$, so $\angle ACD = 180^\circ - 72^\circ = 108^\circ$.

Step 2 — in triangle ACD , since $AC = CD$, the base angles are equal: $\angle CAD = \angle CDA = \frac{180^\circ - 108^\circ}{2} = 36^\circ$.

Step 3 — angle BAC equals $\angle BAD - \angle CAD = 109^\circ - 36^\circ = 73^\circ$.

Step 4 — in triangle ABC , $\angle ABC = 180^\circ - \angle BAC - \angle ACB = 180^\circ - 73^\circ - 72^\circ = 35^\circ$.

23. Answer: b

Explanation:

Frequency is correct.

The frequency of a wave is set by the source that produces it, not by the medium through which it travels. As a sound wave passes from one medium to another, or through different regions of the same medium, the source continues to generate the same number of oscillations per second, so the frequency is conserved.

Speed and wavelength, on the other hand, depend on the elastic and inertial properties of the medium and change together through the relation $v = f\lambda$: if speed changes, wavelength adjusts so that f stays constant. Amplitude can also change because of absorption or spreading. That leaves frequency as the only quantity that stays unchanged.

24. Answer: c

Explanation:

$2^6 \times 5^3 \times 3^3$ is correct.

The LCM of several numbers is found by writing each as a product of prime powers and then taking the highest power of every prime that appears.

Step 1 — prime factorisations: $64 = 2^6$, $125 = 5^3$, $108 = 2^2 \times 3^3$.

Step 2 — primes involved are 2, 3 and 5. Highest power of 2 is 2^6 (from 64); highest power of 3 is 3^3 (from 108); highest power of 5 is 5^3 (from 125).

Step 3 — $\text{LCM} = 2^6 \times 3^3 \times 5^3 = 64 \times 27 \times 125 = 216000$. The option written as $2^6 \times 5^3 \times 3^3$ is just a reordering of the same product and is therefore correct. Options containing 4^2 are mis-prime factorisations because 4 is not prime.

25. Answer: b

Explanation:

86 is correct.

To square-root a four-digit perfect square, use the last-digit rule and bracketing. The last digit of 7396 is 6, so the square root must end in 4 or 6. The number lies between $80^2 = 6400$ and $90^2 = 8100$, so the root is an integer in the eighties.

Step 1 – candidates ending in 4 or 6 within the eighties are 84 and 86.

Step 2 – test: $84^2 = 7056$, which is less than 7396; $86^2 = 7396$, which matches exactly.

Step 3 – therefore $\sqrt{7396} = 86$. The options 94 and 96 fall above $90^2 = 8100$ and so cannot be the root.

26. Answer: d

Explanation:

116 years is correct.

Let Piyali's present age be P and Najeeb's present age be N . Age gap gives $N - P = 4$, so $N = P + 4$.

Step 1 – Write the condition 36 years ago: $5(N - 36) = 6(P - 36)$.

Step 2 – Substitute $N = P + 4$: $5(P + 4 - 36) = 6(P - 36)$, which simplifies to $5P - 160 = 6P - 216$.

Step 3 – Solve: $P = 56$, so $N = 60$. The sum of the present ages is $56 + 60 = 116$ years.

27. Answer: b

Explanation:

810 cm^2 is correct.

Step 1 — Find the side of each cube from its volume. $a^3 = 729 \Rightarrow a = 9 \text{ cm}$.

Step 2 — Joining two identical cubes along one face produces a cuboid of dimensions $9 \times 9 \times 18 \text{ cm}$.

Step 3 — Total surface area of the cuboid: $2(lb + bh + hl) = 2(9 \times 9 + 9 \times 18 + 18 \times 9) = 2(81 + 162 + 162) = 2 \times 405 = 810 \text{ cm}^2$.

28. Answer: c

Explanation:

uniform acceleration is correct.

Near the Earth's surface, in the absence of air resistance, every freely falling body experiences the same gravitational pull that produces a constant acceleration $g \approx 9.8 \text{ m/s}^2$ directed vertically downward. Because the force is constant and the mass is unchanged, the acceleration itself is constant — this is what the term 'uniform acceleration' denotes.

The velocity therefore keeps increasing by the same amount every second, which rules out uniform velocity and uniform speed. The acceleration is not changing, so 'non-uniform acceleration' is also wrong. This principle was demonstrated by Galileo and underpins Newton's second law applied to free fall.

29. Answer: a

Explanation:

50 is correct.

The outer frame is a 4×4 grid of equal squares, and on top of it four smaller squares are drawn, each centred on a point where the grid lines cross inside one quarter of the frame.

Step 1 — Squares of the 4×4 grid: 16 of size 1×1 , 9 of size 2×2 , 4 of size 3×3 and 1 of size 4×4 , i.e. $16 + 9 + 4 + 1 = 30$.

Step 2 — Each of the four extra squares is cut by the grid lines through its centre into 4 small squares; with the extra square itself that is 5 squares each, i.e. $4 \times 5 = 20$.

Hence, the total number of squares is $30 + 20 = 50$.

30. Answer: d

Explanation:

0.0384 is correct.

Step 1 — Clear the decimal by multiplying numerator and denominator by 10: $\frac{4.8}{125} = \frac{48}{1250}$.

Step 2 — Make the denominator a power of 10 by multiplying by 8: $\frac{48 \times 8}{1250 \times 8} = \frac{384}{10000}$.

Step 3 — Shift the decimal four places left: $\frac{384}{10000} = 0.0384$. A quick cross-check: $0.0384 \times 125 = 4.8$, confirming the result.

31. Answer: a

Explanation:

Neither 1 nor 2 follows is correct.

Both statements are of the particular affirmative form 'Some A are B'. In classical syllogism the middle term must be distributed at least once for a definite conclusion to be drawn — here the middle term 'wool' is not distributed in either statement, so no valid conclusion linking plastic and paper can be derived.

Draw a Venn diagram: the 'plastic-wool' overlap and the 'wool-paper' overlap may lie in completely different parts of the wool circle, so there is no guarantee that plastic and paper overlap at all. Both conclusion 1 and conclusion 2 are therefore only possibilities, not necessary consequences, and neither follows logically.

32. Answer: c

Explanation:

Handi is correct.

In the pair 'Cup : Glass', both items are vessels used to drink from — a cup is the smaller/traditional version and a glass is the larger/common version used for the same purpose of drinking.

The analogy continues on the cooking side: a 'Kettle' is a vessel used for boiling or cooking food in liquid; the matching partner must also be a cooking vessel of the same utility. A 'Handi' is a traditional Indian cooking pot used for the same purpose, so the pair 'Kettle : Handi' preserves the 'two vessels of the same type' relationship. 'Boil' is an action, 'Beverage' is a drink, and 'Plate' is for serving — none match the vessel-vessel pattern.

33. Answer: d

Explanation:

30 days is correct.

Step 1 — Total man-hours needed = $15 \times 8 \times 21 = 2520$ man-hours.

Step 2 — Convert women to equivalent men. Given 3 women = 2 men, so 21 women = $\frac{2}{3} \times 21 = 14$ men.

Step 3 — Let the required number of days be D . Equate work done: $14 \times 6 \times D = 2520 \Rightarrow 84D = 2520 \Rightarrow D = 30$.

So 21 women working 6 hours a day will finish the job in 30 days.

34. Answer: a

Explanation:

Friday is correct.

In a bar graph that shows daily arrivals, the day with the maximum arrivals is simply the day whose bar reaches the greatest height on the vertical axis. Scan every bar along the horizontal (day) axis and identify the tallest one; its label on the day axis is the answer.

In this graph the bar for Friday rises higher than the bars for Monday, Thursday and Saturday, so Friday records the largest arrival count among the days plotted. Saturday is close but falls short of Friday's peak, while Monday and Thursday are visibly lower.

35. Answer: d

Explanation:

Ester is correct.

The reaction between a carboxylic acid and an alcohol in the presence of a small amount of concentrated sulphuric acid as catalyst produces an ester and water. This reaction is known as esterification: $R\text{-COOH} + R'\text{-OH} \rightarrow R\text{-COOR}' + \text{H}_2\text{O}$.

Esters are responsible for the pleasant fruity smell in many fruits and flowers, and are widely used as flavouring agents and in perfumes. Carboxylic acid is actually a reactant here, not a product; a ketone is formed by oxidation of a secondary alcohol, not by this acid-alcohol combination; and ethanol is itself an alcohol and a reactant, not the product.

36. Answer: d

Explanation:

Vibration is correct.

The three recognised characteristics of a sound wave are loudness, pitch and quality (also called timbre). Loudness depends on the amplitude of the wave, pitch depends on its frequency, and quality is determined by the mixture of overtones that make the same note from a flute sound different from the same note from a violin.

Vibration, however, is the cause of sound — the back-and-forth motion of a source that sets the surrounding air molecules oscillating. It describes the physical origin of a sound wave, not a measurable property of the wave itself, so vibration is not counted among the characteristics of sound.

37. Answer: b

Explanation:

North is correct.

At exactly 5 pm the hour hand is on 5 and the minute hand is on 12. Each hour mark is 30° apart, so the minute hand is $5 \times 30^\circ = 150^\circ$ anticlockwise from the hour hand.

The hour hand points south-east. Measuring directions clockwise from north, south-east is at 135° . Turning 150° anticlockwise from it gives $135^\circ - 150^\circ = -15^\circ$, i.e. 15° west

of north.

A direction only 15° away from north is closest to north among the four choices; east, west and south are all at least 75° away.

Hence, the minute hand points towards the North.

38. Answer: a

Explanation:

61 is correct.

Step 1 — Use the unit-digit clue. The number 3721 ends in 1, so its square root must end in 1 or 9. This narrows the four choices to 61, 71 or 69, 59.

Step 2 — Bracket by nearby perfect squares. $60^2 = 3600$ and $70^2 = 4900$, so the root lies between 60 and 70. Only 61 and 69 remain.

Step 3 — Verify directly: $61^2 = 3721$. Therefore $\sqrt{3721} = 61$.

39. Answer: b

Explanation:

Kabaddi is correct.

Jaswir Singh is an Indian kabaddi player known for his contribution to the national team. He has represented India in international kabaddi tournaments including the Asian Games and the Kabaddi World Cup, and has been part of squads that brought gold home for the country.

Shooting is dominated in India by names such as Abhinav Bindra and Jaspal Rana; cricket and hockey have their own well-known rosters. None of these other sports

counts Jaswir Singh among its celebrated figures, which is why kabaddi is the only correct association.

40. Answer: d

Explanation:

Millets is correct.

Jowar (sorghum), bajra (pearl millet) and ragi (finger millet) are three of the most widely cultivated coarse cereals in India. They are hardy small-grained crops grown mainly in the semi-arid regions of Rajasthan, Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu, where rainfall is low and the soil is less fertile.

These grains are grouped together as 'millets' or coarse cereals and are an important source of protein, fibre and micronutrients. Horticulture refers to garden-crop cultivation of fruits, vegetables and flowers; pulses are leguminous grains such as gram, tur and moong; paddy refers specifically to rice — none of them covers jowar, bajra and ragi.

41. Answer: b

Explanation:

only one is correct.

A monohybrid cross, first demonstrated by Gregor Mendel on garden pea plants, is a genetic cross between two individuals that differ in only one pair of contrasting characters — for example tall versus dwarf, or round versus wrinkled seeds. The prefix 'mono' itself means 'one', which fixes the number of character pairs considered.

Such a cross produces the classic 3 : 1 phenotypic ratio in the F_2 generation, from which Mendel deduced the Law of Segregation. A dihybrid cross considers two pairs of characters and a trihybrid considers three; eight pairs would be a polyhybrid cross. Only 'one' matches the monohybrid definition.

42. Answer: c

Explanation:

395.33 is correct.

Step 1 — Add the integer parts in groups: $23 + 3 = 26$, then $26 + 33 = 59$, then $59 + 333 = 392$.

Step 2 — Add the remaining decimal: $392 + 3.33 = 395.33$.

So the total is 395.33. A quick re-check from left to right gives the same running total, confirming the result.

43. Answer: a

Explanation:

Sanskrit is correct.

The Upanishads are philosophical texts that form the concluding portion of the Vedas, often called the Vedanta or 'end of the Vedas'. They were composed between roughly 800 BCE and 500 BCE and are written in Sanskrit, the classical liturgical language of the Vedic tradition.

Pali is the language of early Theravada Buddhist scriptures such as the Tripitaka; Brahmi is a script, not a language, and was used for Ashoka's edicts; Prakrit refers to a group of vernacular languages used by Buddhist and Jain writers. The sacred Vedic literature, including the Upanishads, uses Sanskrit alone.

44. Answer: c

Explanation:

Kiran Kanojia is correct.

Kiran Kanojia from Faridabad in Haryana is widely recognised as India's first woman blade runner. She lost her leg in a train accident in 2011 and later took up running with a prosthetic blade, going on to complete half marathons across the country and inspiring other amputee athletes.

She has been honoured for her perseverance and has become a motivational figure in Indian para-sport. The other names listed are not associated with being the first Indian woman blade runner, which makes Kiran Kanojia the only correct choice.

45. Answer: a

Explanation:

Gymnosperms is correct.

Gymnosperms are seed-bearing vascular plants (for example pines, cycads and firs) that possess a well-developed vascular system comprising xylem and phloem. The xylem contains specialised conducting tissue — chiefly tracheids — that transports water and dissolved minerals from the roots to the leaves, while the phloem carries food.

Fungi are not plants at all and absorb nutrients directly through hyphae. Thallophyta (algae) and Bryophyta (mosses and liverworts) lack true vascular tissue and rely on diffusion or simple internal strands for water movement, so they cannot be called plants with special water-conducting tissue. Only gymnosperms, among the four, have true xylem for water conduction.

46. Answer: b

Explanation:

A is correct.

The mirror MN stands vertically to the right of the figure, so its image swaps left and right while top and bottom stay the same.

In the given figure the curved mark is on the left of the circle, the horizontal arrow points right and the vertical arrow points up.

In the mirror image the curved mark must move to the right side, the horizontal arrow must point left and the vertical arrow must still point up. Figure A shows exactly this; figure B has the vertical arrow pointing down, and figures C and D move the curved mark to the top or bottom.

Hence, figure A is the mirror image.

47. Answer: b

Explanation:

You Only Need One (YONO) is correct.

YONO, which stands for 'You Only Need One', is State Bank of India's integrated digital banking and lifestyle platform launched in November 2017 by the then Finance Minister Arun Jaitley. It brings banking, investments, insurance, UPI payments and an online shopping marketplace under a single mobile application.

The platform was built using the latest digital technologies to offer customers a unified digital experience, and has since crossed tens of millions of registered users. The other option expansions (YNO, YANO, YON) are not official SBI products, which fixes YONO as the only correct name.

48. Answer: a

Explanation:

Dangal is correct.

The 62nd Jio Filmfare Awards, held in January 2017 for films released in 2016, named Dangal the Best Film of the Year. Directed by Nitesh Tiwari and starring Aamir Khan, Dangal is a biographical sports drama based on the real-life story of wrestler Mahavir Singh Phogat and his daughters Geeta and Babita, who went on to win medals for India at the Commonwealth Games.

Pink was a courtroom drama that won acclaim and the Best Film (Critics) award at the same ceremony, while Neerja and Kapoor & Sons picked up other honours but did not win the main Best Film award for 2016.

49. Answer: d

Explanation:

30 J is correct.

Step 1 — Write the formula for kinetic energy of a body of mass m moving with speed v : $KE = \frac{1}{2}mv^2$.

Step 2 — Substitute $m = 15$ kg and $v = 2$ m/s: $KE = \frac{1}{2} \times 15 \times 2^2 = \frac{1}{2} \times 15 \times 4$.

Step 3 — Simplify: $KE = \frac{60}{2} = 30$ J. The option '187.5 ms' is a wrong unit altogether, 17.5 J and 187.5 J come from mis-substituting the values.

50. Answer: a

Explanation:

C is correct.

The question figure is a pointed outline containing a square crossed by both of its diagonals, with a small circle near the top.

Figure A has both diagonals but no small circle; figures B and D have only one diagonal.

Figure C is the only option that has the square with both diagonals together with the small circle.

Hence, figure C is the closest match to the question figure.

51. Answer: c**Explanation:**

₹ 375 is correct.

Manure accounts for 40% of the total monthly expenditure, so the total spending can be recovered from the given manure cost.

Step 1 — $40\% \times T = 750$, so $T = \frac{750}{0.40} = 1875$.

Step 2 — New plants form 20% of the total, giving $20\% \times 1875 = \frac{1875}{5} = 375$.

So the expected spend on new plants is ₹ 375.

52. Answer: d**Explanation:**

Magahi is correct.

Magahi, also called Magadhi, is an Indo-Aryan language descended from the ancient Magadhi Prakrit that was once the court language of the Mauryan empire. It is widely spoken in the Patna, Gaya, Nalanda and Nawada districts of Bihar and in neighbouring parts of Jharkhand.

Meitei is the official language of Manipur, Bhojpuri is spoken mainly in western Bihar and eastern Uttar Pradesh, and Maithili is centred in the Mithila region of north Bihar – none of them carries the historical name Magadhi.

53. Answer: c

Explanation:

$x(x + 3)$ is correct.

Step 1 – The LCM of two algebraic expressions is the product divided by their HCF. The expressions x and $x + 3$ share no common factor other than 1, so $\gcd(x, x + 3) = 1$.

Step 2 – Hence $\text{LCM} = \frac{x \cdot (x + 3)}{1} = x(x + 3)$, which cannot be simplified further without introducing extra factors like x^2 .

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54. Answer: c

Explanation:

0.44 A is correct.

Ohm's law states that the current in a conductor is directly proportional to the voltage across it and inversely proportional to its resistance, giving $I = \frac{V}{R}$.

Step 1 – Substitute the given values: $V = 220 \text{ V}$ and $R = 500 \Omega$.

Step 2 — $I = \frac{220}{500} = 0.44$ A. The other options are off by factors of 10 or 100, which would require resistance values of 50, 5 or 0.5 ohm respectively.

55. Answer: d

Explanation:

$2\sqrt{2}$ is correct.

Step 1 — $\csc A = \sqrt{2}$ gives $\sin A = \frac{1}{\sqrt{2}}$. Since A is acute, $A = 45^\circ$.

Step 2 — $\sin 2A = \sin 90^\circ = 1$ and $\sec A = \sec 45^\circ = \sqrt{2}$.

Step 3 — $\frac{4 \sin 2A}{\sec A} = \frac{4 \cdot 1}{\sqrt{2}} = \frac{4}{\sqrt{2}} = 2\sqrt{2}$.

56. Answer: c

Explanation:

$\frac{6}{7}$ is correct.

Each term fits the telescoping pattern $\frac{1}{n(n+1)} = \frac{1}{n} - \frac{1}{n+1}$.

Step 1 — Rewrite the terms: $\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} + \frac{1}{5 \cdot 6} + \frac{1}{6 \cdot 7}$.

Step 2 — Expand using the identity: $(1 - \frac{1}{2}) + (\frac{1}{2} - \frac{1}{3}) + \dots + (\frac{1}{6} - \frac{1}{7})$. All intermediate terms cancel, leaving $1 - \frac{1}{7} = \frac{6}{7}$.

57. Answer: a

Explanation:

Gravitational force is correct.

Newton's universal law of gravitation states that every particle of matter in the universe attracts every other particle with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between them. It is this force that keeps planets in orbit and gives objects their weight on Earth.

The nuclear force acts only at sub-atomic distances inside the nucleus; a purely repulsive force cannot explain mutual attraction; and the electromagnetic force acts only between charged or magnetised bodies, not between every mass in the universe.

58. Answer: a

Explanation:

M. Subbarayudu is correct.

M. Subbarayudu, an Indian Foreign Service officer, was appointed as the Ambassador of India to the Plurinational State of Bolivia. The appointment, cleared by the Ministry of External Affairs, placed him in charge of bilateral political, trade and cultural ties from the Indian mission in La Paz.

Mukta Dutta Tomar served as India's envoy to Germany; Sunil Kumar Lal was named as High Commissioner to a different mission; and C. P. Ahmad Javed held postings elsewhere, so none of them took the Bolivia posting.

59. Answer: b

Explanation:

Carpel is correct.

The anther is the pollen-producing tip of the stamen. It consists of anther lobes (pollen sacs) in which pollen grains develop, held together by a strip of tissue called the connective.

So pollen grains, the anther sac and the connective all belong to the anther.

The carpel (pistil) is the female part of the flower, made of stigma, style and ovary, and is not part of the anther.

Hence, the carpel is not a part of the anther.

60. Answer: d

Explanation:

D is correct.

The four figures are M (A), N (B), O (C) and η (D).

M, N and O are letters of the English alphabet.

η (eta) is a letter of the Greek alphabet, not English.

Hence, figure D is the odd one out.

61. Answer: c

Explanation:

Ethane is correct.

Saturated hydrocarbons (alkanes) have only single carbon-carbon bonds and follow the general formula C_nH_{2n+2} .

Ethane, C_2H_6 , fits this formula. Propene (C_3H_6) and ethene (C_2H_4) contain a carbon-carbon double bond, and acetylene (C_2H_2) a triple bond, so all three are unsaturated.

Hence, ethane is a saturated hydrocarbon.

62. Answer: d

Explanation:

Only conclusion II follows is correct.

The statement explicitly apologises for the delay and, as a direct remedial gesture, offers to send the suit to the customer's home free of charge. The home-delivery here is a one-off compensation, not a general service, so it is reasonable to conclude that the delay caused the home-delivery offer — this matches conclusion II.

Conclusion I claims the tailor runs a standing delivery service, but the statement never asserts that; the delivery is offered only in this specific case to make up for the delay. Hence I does not follow while II does.

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63. Answer: b

Explanation:

Shape – amoeboid or circular shape is correct.

Mature mammalian red blood cells are small biconcave discs, about 7.5 micrometres in diameter, lacking a nucleus. This shape gives them a large surface area for gaseous exchange and lets them squeeze through narrow capillaries. Describing them as amoeboid is wrong because amoeboid cells (like white blood cells) constantly change shape by extending pseudopodia, which mature RBCs do not do.

The other statements are accurate: RBCs transport oxygen and carbon dioxide using haemoglobin, they are counted using a haemocytometer under a microscope, and their typical diameter is around $7.5 \mu\text{m}$.

64. Answer: d

Explanation:

D is correct.

Two things change from one figure to the next: the number of small triangles above the star and the shading of the star's arms.

Step 1 – The triangles go 1, 2, 3, 4, so the next figure must have 5 triangles. This rules out figure C, which has only 3.

Step 2 – The shaded arms of the star move round by one position at each step. Continuing this movement from the fourth figure gives the shading shown in figure D, while figures A and B repeat shadings already seen earlier in the series.

Hence, figure D completes the series.

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65. Answer: d

Explanation:

40 is correct.

The weighted average of the two groups equals the overall average, so the number of girls can be found by equating total marks to average times head count.

Step 1 – Let girls = g . Total marks: $24 \times 15 + g \times 17 = 360 + 17g$. Head count: $24 + g$.

Step 2 – $\frac{360 + 17g}{24 + g} = 15.8$, so $360 + 17g = 379.2 + 15.8g$, giving $1.2g = 19.2$ and $g = 16$.

Step 3 — Total students = $24 + 16 = 40$.

66. Answer: b

Explanation:

The image in which every element is flipped top-to-bottom about AB, with the filled triangles pointing down and the curl at the bottom, is correct.

AB is a horizontal mirror line below the figure, so the reflection is a vertical flip: whatever is at the top moves to the bottom and upward-pointing parts point downward, while left and right stay unchanged.

In the given figure the curl is at the top and the filled triangles point upward; in the image they must appear with the curl at the bottom and the filled triangles pointing downward.

The small side arrows keep their left/right positions and directions, and every arrowhead stays solid as in the original.

Hence, the correct image is the one showing the curl at the bottom, solid triangles pointing down and both side arrows unchanged.

67. Answer: c

Explanation:

1932 is correct.

The Poona Pact was signed on 24 September 1932 between Dr B. R. Ambedkar, representing the depressed classes, and Mahatma Gandhi, who was then on a fast-unto-death in Yerwada Jail against the Communal Award of British Prime Minister Ramsay MacDonald. The award had granted separate electorates to the depressed

classes; the pact replaced them with reserved seats within the general electorate, raising the reserved seats in the provincial legislatures.

The years 1912, 1922 and 1942 relate to other events of the freedom struggle (such as the Non-Cooperation Movement and the Quit India Movement) but not to the Poona Pact.

68. Answer: b

Explanation:

25.66 min is correct.

If the faster pipe fills the tank in x minutes, the slower pipe takes $6x$ minutes, so their one-minute work adds up to the combined one-minute work of the joint pipe.

$$\text{Step 1} - \frac{1}{x} + \frac{1}{6x} = \frac{1}{22}.$$

$$\text{Step 2} - \text{LHS} = \frac{6+1}{6x} = \frac{7}{6x}, \text{ so } \frac{7}{6x} = \frac{1}{22} \text{ and } 6x = 154.$$

$$\text{Step 3} - x = \frac{154}{6} \approx 25.66 \text{ min.}$$

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69. Answer: c

Explanation:

D is correct.

Each figure is a circle with a dot at its centre and an arrow.

In A, B and C the arrow starts at the centre dot and points outwards, away from the centre.

In D the arrow starts outside the circle and points inwards, towards the centre dot.

Hence, figure D is the odd one out.

70. Answer: b

Explanation:

45 and 36 is correct.

When two numbers are in ratio $a : b$ with $\gcd(a, b) = 1$, writing the numbers as ak and bk gives $\text{LCM} = abk$.

Step 1 — With ratio 5:4 ($\gcd = 1$), let the numbers be $5k$ and $4k$. Then $\text{LCM} = 5 \cdot 4 \cdot k = 20k$.

Step 2 — $20k = 180$ gives $k = 9$, so the numbers are $5 \cdot 9 = 45$ and $4 \cdot 9 = 36$.

71. Answer: b

Explanation:

Thallophyta, Pteridophyta and Bryophyta is correct.

In plant classification, Cryptogamae are the non-flowering, seedless plants whose reproductive organs are hidden — the Greek word *cryptos* means hidden and *gamos* means married. The group covers three divisions: Thallophyta (algae, fungi, lichens), Bryophyta (mosses, liverworts) and Pteridophyta (ferns, horsetails).

Gymnosperms and Angiosperms produce visible seeds and flowers (angiosperms) and are therefore grouped as Phanerogams, not Cryptogams — so any option listing them is incorrect.

72. Answer: b

Explanation:

Laxman Pai is correct.

Laxman Pai, a veteran painter from Goa and a former Principal of the Goa College of Art, was conferred the Padma Bhushan in 2018 for his contribution to Art – Painting. Known for his lyrical oils, watercolours and his Ragamala and Geet Govinda series, he had earlier received the Padma Shri in 1987.

Nandalal Bose, Jamini Roy and M. F. Husain were celebrated Indian painters who received national honours in earlier decades – Nandalal Bose received the Padma Vibhushan in 1954, Jamini Roy the Padma Bhushan in 1955 and Husain the Padma Bhushan in 1973 – but none of them received the 2018 award.

73. Answer: d

Explanation:

6 is correct.

The arithmetic mean of a frequency distribution is $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$.

$$\text{Step 1} - \sum f_i = 3 + 2 + 7 + a + 4 + 8 = 24 + a.$$

$$\text{Step 2} - \sum f_i x_i = 1 \cdot 3 + 3 \cdot 2 + 5 \cdot 7 + 9a + 11 \cdot 4 + 13 \cdot 8 = 3 + 6 + 35 + 9a + 44 + 104 = 192 + 9a.$$

$$\text{Step 3} - \frac{192 + 9a}{24 + a} = 8.2, \text{ so } 192 + 9a = 196.8 + 8.2a, \text{ which gives } 0.8a = 4.8 \text{ and } a = 6.$$

74. Answer: c

Explanation:

₹ 600 is correct.

Selling price at a given profit percentage is cost price multiplied by one plus profit by 100.

$$\text{Step 1} - SP_{10\%} - SP_{5\%} = 1.10 CP - 1.05 CP = 0.05 CP.$$

Step 2 - This difference equals ₹ 30, so $0.05 CP = 30$.

$$\text{Step 3} - CP = \frac{30}{0.05} = 600, \text{ giving a cost price of ₹ 600.}$$

75. Answer: b

Explanation:

10.5 is correct.

$$\text{Step 1} - \text{One-day work: } A + B = \frac{1}{18} \text{ and } A = \frac{1}{21}, \text{ so } B = \frac{1}{18} - \frac{1}{21} = \frac{7-6}{126} = \frac{1}{126}.$$

Step 2 - Let A leave n days before completion. B works alone for those last n days; A and B work together for $27 - n$ days.

$$\text{Step 3} - \text{Total work equation: } \frac{27-n}{18} + \frac{n}{126} = 1. \text{ Multiplying by 126: } 7(27-n) + n = 126, \text{ i.e. } 189 - 6n = 126.$$

$$\text{Step 4} - 6n = 63, \text{ so } n = 10.5 \text{ days.}$$

76. Answer: d

Explanation:

36 is correct.

Let the two-digit number be $10a + b$ with $a + b = 9$. Adding 27 reverses the digits, so $10a + b + 27 = 10b + a$.

$$\text{Step 1} - \text{Simplify: } 9b - 9a = 27, \text{ giving } b - a = 3.$$

Step 2 — Solve with $a + b = 9$: adding the two equations gives $2b = 12$, so $b = 6$ and $a = 3$.

Step 3 — Original number is $10(3) + 6 = 36$; verify: $36 + 27 = 63$, which is 36 reversed.

77. Answer: d

Explanation:

All conclusions follow. is correct.

From "All rings are metals" and "All metals are amalgams", by transitivity every ring is an amalgam, so Conclusion 1 is a direct syllogistic deduction.

Conclusion 2 follows from the converse of "All metals are amalgams": if every metal is an amalgam, then some amalgams must be metals (metals form a non-empty subset of amalgams).

Both conclusions are logically valid, so the correct choice is that both follow.

78. Answer: b

Explanation:

75 is correct.

If 57 marks represent 76% of the total, the total can be recovered by dividing by the percentage expressed as a fraction.

Step 1 — Set up the equation: $\frac{76}{100} \times T = 57$.

Step 2 — Solve for T: $T = \frac{57 \times 100}{76} = \frac{5700}{76} = 75$.

79. Answer: d

Explanation:

Third is correct.

In the Badminton World Federation (BWF) women's singles rankings released at the end of 2017, Indian shuttler P.V. Sindhu was placed at World No. 3. She climbed to this position after a strong year that included a World Championship silver medal and a Dubai Super Series Finals title.

At that point, Tai Tzu-ying of Chinese Taipei held the top spot, with Akane Yamaguchi of Japan at No. 2, followed by Sindhu.

80. Answer: c

Explanation:

North-East is correct.

Narcondam is a small volcanic island in the Andaman Sea, lying to the north-east of Port Blair and about 135 km east of the North Andaman coast. It belongs to the North and Middle Andaman administrative district and is classified as a dormant volcano by the Geological Survey of India.

The island hosts the endemic Narcondam hornbill and is a protected wildlife sanctuary, so public access is restricted.

81. Answer: b

Explanation:

7 is correct.

Substitute the operators and simplify using the BODMAS order of operations. The expression evaluates to $40 \div 5 + 6 \times 2 - 13$.

Step 1 – Division: $40 \div 5 = 8$.

Step 2 – Multiplication: $6 \times 2 = 12$.

Step 3 – Add and subtract left to right: $8 + 12 - 13 = 7$.

82. Answer: c

Explanation:

Alauddin Khilji is correct.

Amir Khusro (1253–1325) was a Sufi musician, poet and scholar associated with the Delhi Sultanate. He served several Khilji and Tughlaq rulers, but his most celebrated court association was with Sultan Alauddin Khilji, during whose reign he composed many of his best-known Persian masnavis and musical innovations.

Khusro is credited with pioneering the qawwali form, inventing or popularising the sitar and tabla, and shaping early Hindavi poetic traditions. Jahangir, Aurangzeb and Shah Jahan were Mughal emperors who ruled more than two centuries after his death.

Hence, the ruler Amir Khusro served is Alauddin Khilji.

Note: RRB did not award marks for this question in the official key.

83. Answer: c

Explanation:

Reserve Bank of India (RBI) is correct.

The Reserve Bank of India has observed Financial Literacy Week annually since 2016 to spread awareness among the public on key banking and financial topics. The June 2018 edition (4–8 June 2018) was conducted with the central theme of "Consumer Protection", focusing on grievance redressal, limited liability for unauthorised electronic transactions, and the RBI's Ombudsman Scheme.

Commercial banks such as Axis, ICICI and SBI participate in the campaign at the branch level, but the week itself is a nationwide initiative of the RBI.

84. Answer: b

Explanation:

2:1 is correct.

Water has the molecular formula H_2O , meaning every molecule contains two hydrogen atoms covalently bonded to a single oxygen atom. The atom ratio therefore reads $\text{H} : \text{O} = 2 : 1$.

Note that this is the ratio of atoms, not of masses: by mass the ratio is approximately $2 \times 1 : 16 = 1 : 8$, which is why the other options describing simple whole-number ratios do not apply to the atom-count question.

85. Answer: d

Explanation:

Velocity is correct.

Kinetic energy is defined as the energy a body possesses because of its motion and is given by $KE = \frac{1}{2}mv^2$, where m is the mass and v is the velocity. Because the velocity appears squared in the expression, kinetic energy rises steeply as velocity grows.

Height is associated with gravitational potential energy (mgh), while displacement and distance by themselves do not change kinetic energy unless they are accompanied by a change in speed.

86. Answer: b

Explanation:

First week is correct.

Van Mahotsav is an annual pan-India tree-planting festival observed in the first week of July (traditionally 1–7 July). It was initiated in 1950 by K.M. Munshi, then Union Minister for Agriculture and Food, as a mass movement to raise awareness about forest conservation and to encourage planting trees.

During the week, central and state forest departments, schools and voluntary organisations plant lakhs of saplings across the country. The timing in early July coincides with the onset of the south-west monsoon, which greatly improves sapling survival.

87. Answer: b

Explanation:

Only assumption I is implicit is correct.

The teacher advises the student to follow specific points to attain excellence. This advice makes sense only if the student is not already dancing with excellence — otherwise there would be no need to prescribe steps for improvement. Hence Assumption I is implicit in the statement.

Assumption II, that some dance teachers themselves dance with excellence, is an external claim about teachers in general. The statement is about advising a student

and does not require the teacher's own performance level to be assumed, so II is not implicit.

88. Answer: a

Explanation:

16, 20 is correct.

Let the numbers be $4x$ and $5x$, in the given ratio.

Step 1 – After adding 6 to each, the new ratio is $\frac{4x + 6}{5x + 6} = \frac{11}{13}$.

Step 2 – Cross multiply: $13(4x + 6) = 11(5x + 6)$, giving $52x + 78 = 55x + 66$.

Step 3 – Solve: $3x = 12$, so $x = 4$. The numbers are $4 \times 4 = 16$ and $5 \times 4 = 20$; check: $22 : 26 = 11 : 13$.

89. Answer: b

Explanation:

Jammu and Kashmir Peoples Democratic Party is correct.

Mehbooba Mufti is the president of the Jammu and Kashmir Peoples Democratic Party (JKPDP), which was founded by her father Mufti Mohammad Sayeed in 1999. She served as the Chief Minister of the erstwhile state of Jammu and Kashmir from April 2016 to June 2018 as the head of a PDP-BJP coalition government.

The coalition ended in June 2018 when the BJP withdrew support, leading to Governor's rule and her resignation. The CPI(M), INC and BJP are separate national parties and are not her political home.

90. Answer: b

Explanation:

Urethra is correct.

In the male human body the urethra is a single tube that runs from the urinary bladder through the penis and opens to the exterior. It carries urine from the bladder during urination and also carries semen (sperm plus seminal fluid) during ejaculation, making it the common passage for both.

The vas deferens carries sperm only from the testis to the ejaculatory duct, the ureters carry urine from each kidney to the bladder, and the scrotal sac is the external pouch that houses the testes — none of these doubles as a shared outlet.

91. Answer: d

Explanation:

I is correct.

Convert each letter to its position in the English alphabet: W = 23, R = 18, N = 14, K = 11.

Step 1 — Find the differences between consecutive terms: $23 - 18 = 5$, $18 - 14 = 4$, $14 - 11 = 3$. The gaps decrease by 1 each time.

Step 2 — The next gap must be 2, so the next position is $11 - 2 = 9$, which corresponds to the letter I.

92. Answer: b

Explanation:

The gravitational force between two bodies is always attractive. is correct.

Newton's law of universal gravitation states that every pair of masses attracts each other with a force $F = G \frac{m_1 m_2}{r^2}$, where G is the universal gravitational constant and r is the distance between the masses. Because mass is always a positive scalar, this force is strictly attractive — it has no "repulsive" sign.

Unlike the electrostatic force, which can be attractive or repulsive depending on the sign of charge, gravity has no observed negative-mass counterpart in classical physics, so neither "repulsive" nor "can be either" nor "neutral" is correct.

93. Answer: d

Explanation:

CO₂ is correct.

Slaked lime, calcium hydroxide, reacts with the carbon dioxide present in air to form a hard, insoluble layer of calcium carbonate on the whitewashed surface. The reaction is $\text{Ca(OH)}_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$.

This slow setting is what gives freshly whitewashed walls their characteristic sheen a few days after application. SO₂ and CO do not form CaCO₃ under these conditions, and atmospheric O₂ alone does not react with Ca(OH)₂.

94. Answer: b

Explanation:

Failure is correct.

An optimist is a person who sees the positive outcome; a pessimist is the opposite — one who expects the negative outcome. The relationship between the two words

is that of antonyms, specifically positive expectation versus negative expectation.

Carrying the same antonym relationship to the word "Success" gives its direct opposite, "Failure". The other options, Leading, Hard work and Motivation, are related to success but are not its opposite.

95. Answer: b

Explanation:

21 is correct.

Count the triangles by category: first mark every smallest (unit) triangle formed by the inner line segments, then add the triangles made by combining two unit triangles, then three, and so on up to the whole figure.

Working through each size class and listing them without repetition, the small, medium and large triangles together total 21. Carefully grouping the vertices and tracing each closed three-sided region confirms no triangle has been missed or double-counted.

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96. Answer: d

Explanation:

Only B is true is correct.

Statement A is incorrect. Mass per unit volume of a substance is its density, not rigidity. Rigidity refers to a material's resistance to deformation under an applied shear force and is quantified by the modulus of rigidity, not by mass per unit anything.

Statement B correctly describes kinetic energy. The particles of any substance are in continuous motion, and the energy associated with that motion is the kinetic

energy of the particles; it also underlies thermal motion and the mobility of matter.

97. Answer: c

Explanation:

2,8,4 is correct.

Read each configuration and identify the element from its atomic number: 2,8,6 is sulphur ($Z = 16$, non-metal); 2,8,7 is chlorine ($Z = 17$, non-metal); 2,8,4 is silicon ($Z = 14$); and 2,8,5 is phosphorus ($Z = 15$, non-metal).

Silicon has four valence electrons and is classified as a metalloid, not a non-metal, because it shows metallic lustre, acts as a semiconductor and has intermediate chemical behaviour. The remaining three elements are typical non-metals of Group 15, 16 and 17, so the configuration 2,8,4 is the odd one out.

98. Answer: a

Explanation:

1 Newton $\times$ 1 metre is correct.

Work (and therefore energy) in the SI system is defined as force times the displacement in the direction of the force: $W = F \cdot d$. One joule is the work done when a force of one newton acts on a body and displaces it one metre along the direction of the force.

Pascal is the SI unit of pressure, erg is the CGS unit of energy ($1 \text{ J} = 10^7 \text{ erg}$), and watt is the SI unit of power (joule per second), so none of them combines with a metre to give a joule.

99. Answer: d

Explanation:

Ramesh Kuntal Megh is correct.

Ramesh Kuntal Megh received the Sahitya Akademi Award for the Hindi language in 2017 for his critical work "Vishwa Mithak Sarit Sagar" (Ocean of World Myths). The book is a comparative study of world mythologies and their place in literary tradition.

Nasira Sharma won the Hindi Sahitya Akademi Award in 2016 for "Parijat". Nizam Siddiqui won the Urdu award, and Satya Prakash Joshi was awarded in Rajasthani, so none of them matches this Hindi work.

100. Answer: c

Explanation:

360R is correct.

Split each term into its numerical and alphabetical parts and look for a pattern in each.

Step 1 — Numbers 3, 6, 18, 72, ? Multiply successively by 2, 3, 4, giving $3 \times 2 = 6$, $6 \times 3 = 18$, $18 \times 4 = 72$. The next multiplier is 5, so the next number is $72 \times 5 = 360$.

Step 2 — Letters J (10), L (12), N (14), P (16), ? jump by 2 each time, so the next letter is at position 18, which is R.

Combining both parts gives 360R.