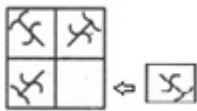


Solutions for Railways ALP CBT 2: Test 7

1 - A

Explanation: National Bank for Agriculture and Rural Development (NABARD) has launched Centre for Climate Change in Lucknow, Uttar Pradesh. It is first of its kind centre in South East Asia. It aims at accelerating concerted climate action by various stakeholders in government, private, financial and non-government sectors.

2 - D



Explanation:

The correct option is (D).

3 - D

Explanation: With 3 articles of P, 6 pencils are given free

Total price = $50 \times 3 + 6 \times 3 = \text{Rs. } 168$

With 2 articles of Q, 6 pens are given free

Total price = $35 \times 2 + 6 \times 5 = \text{Rs. } 100$

Total Price of all product = Rs 268

Discount given = $18 + 30 = \text{Rs } 48$

Discount Percentage = $\frac{48}{268} \times 100 \approx 18\%$

4 - C

Explanation: According to Anu, the anniversary can be on 26th, 27th, 28th or 29th of March.

According to Shreya, the anniversary can be on 29th or 30th of March.

Therefore, the anniversary of their grandparents is on 29th March.

5 - C

Explanation: (Given) $150 \times 5 + 10 \% 3 \div 10 = ?$

After converting the signs-

$= 150 \div 5 - 10 \times 3 + 10$

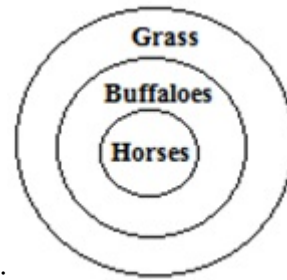
$= 30 - 10 \times 3 + 10$

$= 30 - 30 + 10$

$= 30 + 10 - 30$

$= 40 - 30 = 10$

6 - A



Explanation:

For I: True, as it is a definite case.

For II: False, it is not a possible case.

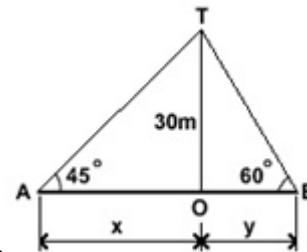
Therefore, only conclusion I follows.

7 - B

Explanation: Mass Density (ρ) is defined as the mass (m) per unit volume (v), i.e.,

$$[\rho] = \frac{[m]}{[v]} = \frac{[M]}{[L^3]} = [M^1 L^{-3}]$$

8 - B



Explanation:

Height of tower = $OT = 30 \text{ m}$

Let A and B be the two points on the ground level on the opposite side of tower OT.

Then,

angle of elevation from A = $\angle TAO = 45^\circ$

and angle of elevation from B = $\angle TBO = 60^\circ$

Distance between AB = $AO + OB = x + y$ (say)

In right angle triangle ATO,

$$\tan 45^\circ = \frac{OT}{AO} = \frac{30}{x}$$

$$x = \frac{30}{\tan 45^\circ} = 30 \text{ m}$$

In right angle triangle BTO,

$$\tan 60^\circ = \frac{OT}{OB} = \frac{30}{y}$$

$$y = \frac{30}{\tan 60^\circ} = \frac{30}{\sqrt{3}} = 17.32 \text{ m}$$

Hence, the required distance =

$$x + y = 30 + 17.32 = 47.32 \text{ m}$$

9 - C

Explanation: Counterbore/Spotface - is used to indicate a counterbore or a spotface. The symbol precedes the dimension of the counterbore or spotface, with no space.

10 - D

Explanation: Neither of the arguments is strong. Having homemade food is definitely a healthier option. Any family member or a maid can cook it. Although there are a number of eating joints, one cannot eat outside every day. Moreover the availability of a number of eating joints is no reason for boys to not learn how to cook.

11 - D

Explanation: Since the month begins with a Sunday, There will be 5 Sundays and 25 other days in the month,

$$\begin{aligned} \text{Required Average} &= \frac{50 \times 5 + 20 \times 25}{30} \\ &= \frac{750}{30} \\ &= 25 \end{aligned}$$

12 - A

Explanation: Ministries of Power and Textiles have joined hands under SAATHI (Sustainable and Accelerated Adoption of efficient Textile technologies to Help small Industries) initiative. Under this initiative, Energy Efficiency Services Limited (EESL), a PSU under Ministry of Power, will procure energy efficient power-looms, motors and rapier kits in bulk and provide them to small and medium Power loom units at no upfront cost.

13 - C

Explanation: $F = 20\text{N}$, $s = 10\text{m}$, $\theta = 90^\circ$

$$\text{Work done, } W_1 = F s \cos\theta = 20 \times 10 \times \cos 90^\circ = 0$$

For vertical motion, the angle between force and displacement is 0° .

Here, $F = 20\text{N}$, $s = 20\text{m}$, $\theta = 0^\circ$

$$\text{Work done, } W_2 = 20 \times 20 \times \cos 0 = 400\text{J}$$

$$\text{Total work done} = W_1 + W_2 = 400\text{J}$$

14 - A

Explanation: Argument I is strong as safety of students is a very important issue. Argument II is weak. Misusing cell phones for texting in class is not a strong reason for stopping children from using cell phones as teachers can keep a check on such activities in the class. Also, just because cell phones can be misused, it doesn't mean that children should be stopped from using them altogether.

15 - D

Explanation: Arpinder Singh clinched India's first men's triple jump gold in 48 years with a jump of 16.77m in the Asian Games 218. Arpinder, who has been without a medal in multi-sporting events since winning a bronze in the 2014 Commonwealth Games, produced a best jump of 16.77m which he came up with in his third attempt.

16 - D

Explanation: Number of females aged 20 years or less
 $= 90\%$ of total females
 $= 90\%$ of 30% of 200
 $= \frac{90}{100} \times \frac{30}{100} \times 200$
 $= 54$

17 - A

Explanation: $7\cos^2\theta + 3\sin^2\theta = 4$
 $4\cos^2\theta + 3\cos^2\theta + 3\sin^2\theta = 4$
 $4\cos^2\theta + 3(\cos^2\theta + \sin^2\theta) = 4$
 $4\cos^2\theta + 3 = 4$
 $\cos^2\theta = \frac{1}{4}$
 $\cos\theta = \frac{1}{2} = \cos 60^\circ$
 $\theta = 60^\circ$

18 - C

Explanation: By clicking connect to Internet one can access the networked resources, usually shared resources.

19 - D

Explanation: $\frac{0.03}{100} \times A = 36$
 $A = 120000$

$$B = \frac{42}{100} \times 120000$$

$$\begin{aligned} \text{Required value} &= \frac{23}{100} \times \frac{42}{100} \times 120000 \\ &= 11592 \end{aligned}$$

20 - C

Explanation: Let total work = LCM of 90 and 80 = 720 units

$$\text{One day work of Amit} = \frac{720}{90} = 8 \text{ units}$$

$$\text{One day work of Ajay} = \frac{720}{80} = 9 \text{ units}$$

Let Amit leave the work after d days.

$$d \times 8 + d \times 9 + 46 \times 9 = 720$$

$$17d = 720 - 414 \Rightarrow d = \frac{306}{17} = 18 \text{ days}$$

21 - A

Explanation: Let the one number be N .

Other number will be $2550 - N$

Then,

$$\frac{7.8}{100} \times N = \frac{9.2}{100} \times (2550 - N)$$

$$(7.8 + 9.2)N = 9.2 \times 2550$$

$$N = 1380$$

Hence number will be 1380 and 1170.

22 - A

Explanation: Only conclusion I follow because prior to the presentation of the Bill, the President was not accustomed to taking the advice of Cabinet for every decision that necessitated the legislators to table this bill. But conclusion II doesn't follow because before this, taking advice was not an obligation on President but it was discretion.

23 - D

Explanation: $m = 0.25 \text{ Kg}$, $u = 16 \text{ m/s}$, $v = -16 \text{ m/s}$

Impulse = $m(v-u) = 0.25 \times (-16-16) = -8.0 \text{ N-s}$

The negative sign indicates that the direction of the impulse is from the batsman to the bowler.

24 - B

Explanation: If l, b, h be the dimensions of the cuboid, then

volume of the cuboid = $l \times b \times h$

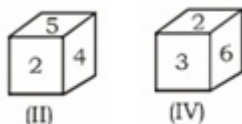
$lb = 4, lh = 40, bh = 10$

$l^2 b^2 h^2 = 4 \times 40 \times 10$

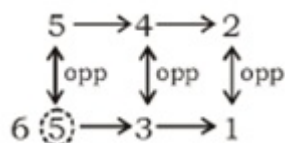
Volume = $lbh = \sqrt{4 \times 40 \times 10} = 40 \text{ cm}^3$

25 - A

Explanation: According to figure II and III



The opposite faces will be:



Thus, 4 is opposite to 3.

26 - D

Explanation: From the first law of thermodynamics,

$$dQ = mL = dU + dW$$

$$dU = mL - dW = 1 \times 2260 - 176$$

$$dU = 2084 \text{ J}$$

27 - D

Explanation: Quality Management is also called software quality assurance (SQA) which serves as an umbrella activity that is applied throughout the software process.

28 - D

Explanation: Neither conclusion I nor conclusion II follows the statement, because, if the The Prime Minister has emphasized that his government will make full efforts for the elevation of farmers and rural poor it doesn't mean previous government didn't done much for the welfare of these people or now onwards it will ignore Urban people.

29 - B

Explanation: The speed of stream = $\frac{24}{6} = 4 \text{ km/hr}$

Speed of the boat while going upstream = $11 - 4 = 7 \text{ km/hr}$

Required Time = $\frac{28}{7} = 4.0 \text{ hr}$

30 - B

Explanation: Reliance Jio Telecommunications has topped in the list of "Change the World list" by Fortunes Global list. Mukesh Ambani's Reliance Jio Telecommunications has ranked as the top company globally on Fortune's 'Change The World' list that ranked companies using the profit motive to help the planet and tackle social problems. It is followed by Merck Pharmaceuticals and America Commercial Banks in the list.

31 - D

two of the three — GO MO NO BO
 three takes four — MO SO RO
 four takes two — SO RO GO

Explanation:

Here, 'two' is coded as GO but nothing can be said about 'the' and 'takes'.

32 - B

Explanation: Let the present age of Vikash be x years.

The present age of Ankit = $x + 14$

Then,

$$3x = x + 14$$

$$x = 7$$

Present age of Ankit = $14 + 7 = 21$ years.

Late after y years the age of Ankit be two times of the age of Vikash.

$$21 + y = 2(7 + y)$$

$$21 + y = 14 + 2y$$

$$y = 7$$

33 - B

Explanation: The Indian Navy has won the coveted KAKADU Cup 2018 in Australia beating 22 other teams. KAKADU 2018 is a biannual joint exercise taking place both ashore and at sea off the coast of Darwin. This year's exercise involves 27 nations and more than 3000 personnel which represent the largest military commitment to the exercise since it began in 1993.

34 - D

Explanation: Let cost price of 10 pens = Selling Price of 18

Pens = Rs x

$$\text{CP of a pen} = \text{Rs } \frac{x}{10}$$

$$\text{SP of pen} = \text{Rs } \frac{x}{18}$$

Required loss percentage

$$= \frac{CP-SP}{CP} \times 100 = \frac{\frac{x}{10} - \frac{x}{18}}{\frac{x}{10}} \times 100 = 44\frac{4}{9}\%$$

35 - A

Explanation: Amount A = Rs. 13520, Principal = Rs. 12500, Rate of Interest = R and Time period T = 2 years

$$A = P \left(1 + \frac{R}{100} \right)^T$$

$$13520 = 12500 \left(1 + \frac{R}{100} \right)^2$$

$$\frac{13520}{12500} = \left(1 + \frac{R}{100} \right)^2$$

$$\frac{676}{625} = \left(1 + \frac{R}{100} \right)^2$$

$$\left(\frac{26}{25} \right)^2 = \left(1 + \frac{R}{100} \right)^2$$

$$1 + \frac{R}{100} = \frac{26}{25}$$

$$\frac{R}{100} = \frac{1}{25}$$

$$R = 4\%$$

36 - A

Explanation: Oblique projection is one method of pictorial projection. Oblique projection shows three dimensional objects on the projection plane in one view only. This type of drawing is useful for making an assembly of an object and provides directly a production drawing.

37 - C

Explanation: Let the initial total volume of the mixture be 5x liters

According to question-

$$\frac{4}{4+1} \times 5x = \frac{2}{1+2} \times (5x + 40)$$

$$x = 40$$

$$\begin{aligned} \text{Required Volume} &= 5x + 40 \\ &= 200 + 40 = 240 \text{ liters} \end{aligned}$$

38 - C

Explanation: One day's work of the carpenter = $\frac{1}{9}$ and that

$$\text{of his assistant} = \frac{1}{12}$$

One day's work of the carpenter and his assistant =

$$\frac{1}{9} + \frac{1}{12} = \frac{7}{36}$$

$$\text{In 3 days work completed by them} = 3 \times \frac{7}{36} = \frac{7}{12}$$

$$\text{Remaining Work} = 1 - \frac{7}{12} = \frac{5}{12}$$

It is completed by his assistant.

$$\text{Required days} = \frac{\frac{5}{12}}{\frac{1}{12}} = 5 \text{ days}$$

39 - C

Explanation: To obtain points on ellipse, the circle should be enclosed in a square and mid points of sides and intersection of diagonals with the circle are 8 points. Lines are drawn through these points, parallel to the sides of the square.

40 - C

Explanation: The impedance of a capacitor is inversely proportional to its capacitance value. Reciprocal of equivalent impedance of parallel connected circuit elements is sum of reciprocal of impedance of each of the elements.

$$C_{eq} = C_1 + C_2 + C_3 + C_4 + C_5$$

$$C_{eq} = 50 \mu F + 50 \mu F + 50 \mu F + 50 \mu F + 50 \mu F$$

$$C_{eq} = 250 \mu F$$

41 - B

Explanation: The pattern follow is:

$$\rightarrow 4 + 3 + 5 + 6 = 18$$

$$\rightarrow 3 + 6 + 8 + 6 = 23 \text{ (Prime Number)}$$

$$\rightarrow 1 + 4 + 5 + 6 = 16$$

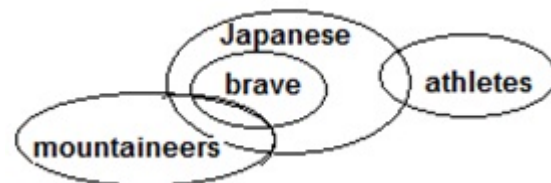
$$\rightarrow 2 + 3 + 5 + 4 = 14$$

42 - A

Explanation: Ukraine has launched annual joint military exercise named Rapid Trident with United States and other NATO (North Atlantic Treaty Organization) member countries. Its main goal is to practice countering armed aggression in conditions of the hybrid war.

43 - B

Explanation:



I. False, as it is not a definite case.

II. True, it is a definite condition.

III. False, it is not a definite case.

Therefore, only II follows.

44 - B

Explanation: Let the original fraction be $\frac{x}{y}$

As per the given information,

$$\frac{x+1}{y+1} = \frac{4}{3}$$

$$3x - 4y = 1 \dots\dots(I)$$

$$\frac{x-1}{y-1} = \frac{3}{2}$$

$$2x - 3y = -1 \dots\dots(II)$$

From equation (I) and (II),

$$x = 7, y = 5$$

$$\text{Original Fraction} = \frac{7}{5}$$

45 - A

Explanation: By Wien's law-

Wavelength is reciprocal of temperature.

On increasing temperature, wavelength decreases.

As yellow colour has minimum wavelength, the substance gradually becomes yellow.

46 - D

Explanation:

Manage Matter Mockery Motive Movies

4 1 3 2 5

47 - C

Explanation: Olympic Council of Asia (OCA) has chosen Japanese woman swimmer Rikako Ikee (18) as winner of Most Valuable Player (MVP) Trophy Award in 2018 Jakarta for winning 6 gold and 2 silver medals. With this, she became first female winner of MVP award.

48 - B

Explanation: David Beckham will be presented the 2018 UEFA President's Award for his remarkable career and humanitarian efforts. UEFA President Aleksander Ceferin called Beckham "a true football icon of his generation". The President's Award recognizes outstanding achievements, professional excellence and exemplary personal qualities.

49 - B

Explanation: The S&P BSE Private Banks Index is drawn from the constituents of the S&P BSE Finance Index. Asia Index Pvt. Ltd, a joint venture between S&P Dow Jones Indices and BSE Ltd. Asia Index Pvt. Ltd has announced the launch of an index designed to measure the performance of private banks.

50 - D



(D)

Explanation:

51 - C

Explanation: Train 18 is the first engine-less train of Indian Railways that will replace India's fastest Shatabdi Express. Train 18 will begin in October and it will be a semi-high speed train that will replace the Delhi-Bhopal Shatabdi Express train. Train 18 is manufactured by Integral Coach Factory (ICF) Chennai.

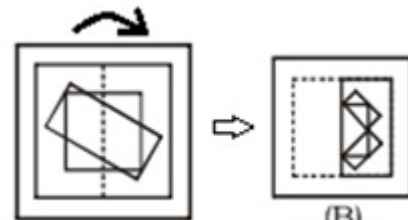
52 - B

Explanation: Relative Distance between Akash and Bimal = 60 - 20 = 40 km

Relative speed = (9-4) km/hr = 5 km/hr

So, time taken to cover 40 km = $\frac{40}{5} = 8 \text{ hr}$

53 - B



(B)

Explanation:

54 - B

Explanation: From the first two statements, 3 stands for 'tasty'.

From the last two statements, 5 stands for 'pie'.

Hence, from the second statement, 4 stands for 'extremely'.

55 - A

Explanation: By conservation of momentum, $MV = mv$

$$M = \frac{mv}{V}$$

$$M = \frac{0.75 \times 12}{2}$$

$$M = \frac{9}{2}$$

$$M = 4.5 \text{ kg}$$

The mass of the gun = 4.5 kg

56 - D

Explanation: Dry chemicals is suitable for cotton or other textile fire.

57 - B

Explanation: Mauritius was the largest source of foreign investment in India, followed by the US and the UK, according to a census by the Reserve Bank. Singapore and Japan were the next two sources of foreign direct investment (FDI), according to the Census on Foreign Liabilities and Assets of Indian Direct Investment Companies 2017-18, released by RBI.

58 - C

Explanation: In a third-class lever, the effort is between the load and the fulcrum. E.x Baseball Bat.

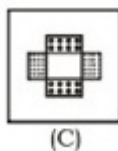
59 - D

Explanation: The word 'PETAL' can only be formed from the given letters.

60 - A

Explanation: A welded joint is shown on a drawing by means of a symbol which specifies the form of weld and a bent arrow and a reference line indicating the location of the weld. The symbols shown here are recommended by the Bureau of Indian Standards.

61 - C



Explanation:

62 - B

Explanation: When the lift is in rest or moving with a uniform velocity, the acceleration = 0. Net force on the boy is zero.

Therefore apparent weight will be equal to real weight of the boy.

63 - A

Explanation: The plain scale gives only up to single decimal value. Comparative scales are just used to represent two different units. The vernier scale gives up to two decimal values.

64 - D

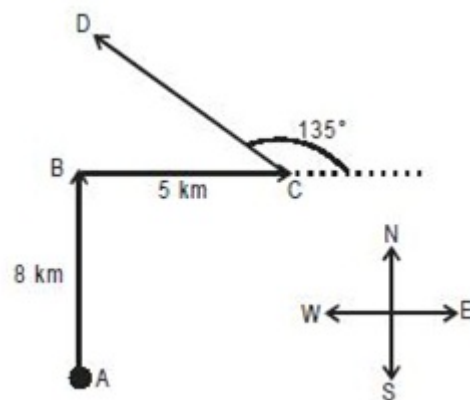
Explanation: The 1st day of a month was Wednesday and the 1st day of the next to next month in the same year was Sunday i.e there were 4 odd days i.e there were 60 days in between these two dates.

This could be possible only when there were 31 and 29 days in these two months.

As the month 1st day was Wednesday wasn't January i.e it must have been February and next month was march.

Therefore 1st day of 7th month i.e July was Sunday.

65 - B



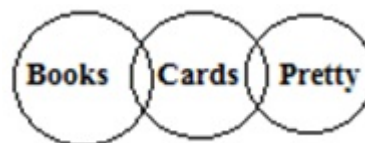
Explanation:

Finally he is moving along CD, which is the North-West direction.

66 - B

Explanation: 1 number represents the players who are both Doctors and Engineers.

67 - D



Explanation:

I. Some books are pretty (false)

II. Some pretty are books (false)

Therefore, neither conclusion I nor II follows.

68 - C

Explanation: Sridevi and Vinod Khanna have been awarded posthumously with best honor awards in 2018. It's Sridevi's first National Award for Best Actress which she got posthumously in 2018. While Vinod Khanna, who passed away last year, has been announced the winner of Dadasaheb Phalke Award.

69 - B

Explanation: From Charles's law,

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$\frac{95}{0+273} = \frac{134}{T_2}$$

$$T_2 = \frac{134 \times 273}{95} \approx 385$$

$$T_2 = 112^\circ\text{C}$$

70 - C

Explanation: Horizontal velocity at any instant,

$$v_x = u = 19.6 \text{ m/s}$$

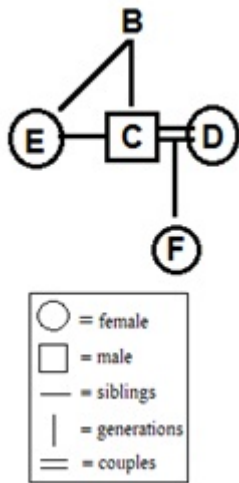
Vertical velocity at any instant,

$$v_y = 0 + gt = 9.8t$$

$$19.6 = 9.8t$$

$$t = 2 \text{ s}$$

71 - B



Explanation:
Hence F is niece of E.

72 - D

Explanation: OSHA ensures that employees are effectively trained on, have been provided with personal protective equipment and use when required for safety or health. Employees must comply with all rules and regulations that apply to their own actions and conduct.

73 - C

Explanation: $6 = 2 \times 3$
 $12 = 2 \times 2 \times 3$
 $18 = 2 \times 3 \times 3$
 $24 = 2 \times 2 \times 2 \times 3$
 $LCM = 2 \times 2 \times 2 \times 3 \times 3 = 72$
 But 72 is not the perfect square. But multiples of 72 are also exactly divisible by given numbers.
 $72 \times 2 = 144$ is the perfect square. So answer is 144.

74 - B

Explanation: Weight of water displaced = Weight of stone in air - Weight of stone in water
 $= 750 - 300$
 $= 450 \text{ N}$
 volume =
 $\frac{\text{mass}}{\text{density}} \rightarrow \frac{(m \times g)}{(g \times \text{density})} \rightarrow \frac{\text{Force}}{(g \times \text{density})}$
 Volume of water displaced = Volume of stone =
 $\frac{450}{9.8 \times 1000} = 0.045 \text{ m}^3$

Density of stone = $\frac{\text{mass}}{\text{volume}} = \frac{750}{9.8 \times 0.045} = 1700.6 \text{ kg/m}^3$

Specific gravity = $\frac{\text{Density of stone}}{\text{Density of water}} = \frac{1700.6}{1000} = 1.7$

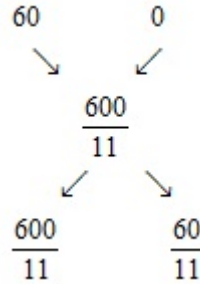
75 - D

Explanation: SP of spirit and solution water = Rs. 75 per litre
 Profit = 37.5 %

CP of spirit and water solution = $\frac{75 \times 100}{137.5} = \frac{3000}{55} = \frac{600}{11}$

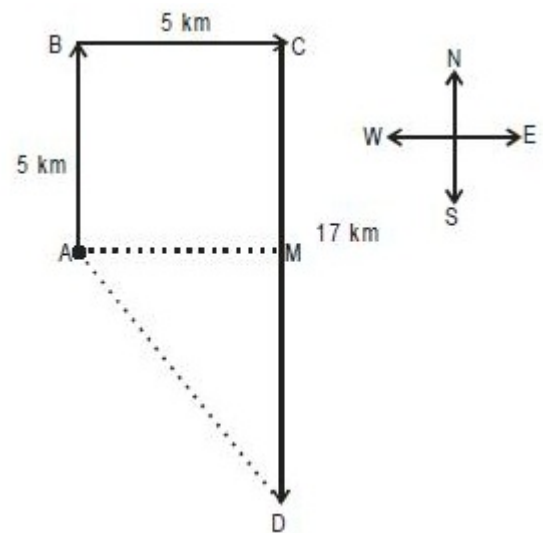
This should be the weighted average of the costs of spirit and water.

By Allegation method-



Required Ratio of spirit and Water = $600 : 60 = 10 : 1$

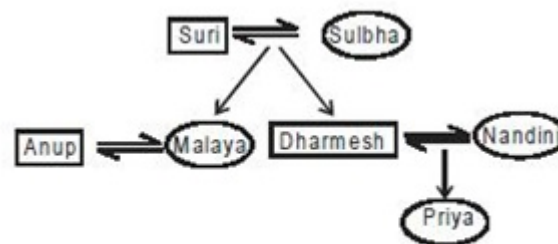
76 - C



Explanation:
 $CM = 5 \text{ km}$
 $MD = 17 - 5 = 12 \text{ km}$
 $AD = \sqrt{5^2 + 12^2} = 13 \text{ km}$

77 - C

Explanation: The family members can be represented as below.



Here \square = male and \circ = female.

Hence, Priya is the Niece of Malaya.

78 - D

Explanation: Superposition theorem can be applied for both AC as well DC excitation to calculate the voltage or current calculations. It holds for both DC and AC

excitation, if the circuit is linear. But superposition theorem is not applicable for power calculations.

79 - B

Explanation: Given-

$$C_p = \frac{5R}{2}$$

$$C_v = C_p - R = \frac{5R}{2} - R = \frac{3}{2}R$$

$$\text{Ratio}(r) = \frac{C_p}{C_v}$$

$$r = \frac{\frac{5R}{2}}{\frac{3R}{2}}$$

$$r = \frac{5}{3}$$

80 - D

Explanation: Minister of Housing and Urban Affairs Hardeep Singh Puri launched the fourth edition of the annual cleanliness survey of urban India – Swachh Survekshan 2019 under Swachh Bharat scheme. The ministry has launched Swachh Survekshan 2019 survey toolkit, ODF plus and ODF plus plus toolkit and swachh manch – a web portal, to encourage large scale citizen participation, to eliminate urination openly.

81 - A

Explanation: Ink Pen is used to draw the blueprints by architects and draftsmen. They are used to draw lines onto the tracing paper. They are used for making the final drafts of the drawing made in pencil.

82 - B

Explanation: Ratio of their share = Ratio of investment of Amit, Bony, Chetan and Durgesh

$$= 22 : 42 : 65 : 71$$

Let the total Profit = Rs P

Share received by Amit and Bony together

$$= \frac{22+42}{22+42+65+71} \times P = 800$$

$$\frac{64P}{200} = 800$$

$$P = 2500$$

$$\text{Share of durgesh} = \frac{71P}{200} = \frac{71 \times 2500}{200} = \text{Rs. } 887.50$$

83 - B

Explanation: If the density of planet is tripled without any change in its radius, g also gets tripled, because g is proportional to the density of the planet.

84 - D

Explanation: The main thing about the wedges is that the wedge is a simple machine that is used as to transfer

applied forces into much larger forces. This means that the wedges are the means of force transfer. This machine is very useful in the industries, and it has a wide application.

85 - C

Explanation: As per census 2011, India has managed to achieve an effective literacy rate of 74.04 per cent in 2011. In the 2001 census the country's literacy rate stood at 64.8 percent. The most notable thing that came across in the 2011 census is the sharp rise in the literacy of females over males.

86 - A

Explanation: D = 57, 69, 76, 88, 95

I = 58, 65, 77, 89, 96

R = 04, 11, 23, 30, 42

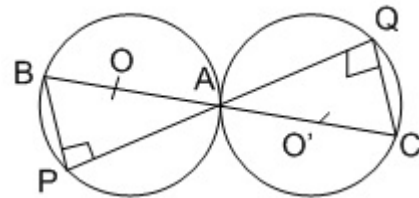
T = 56, 68, 75, 87, 99

The number set 57, 58, 23, 99 correctly represents the word "DIRT".

87 - A

Explanation: VVS Laxman is going to release his autobiography titled "281 and Beyond" very soon. Laxman has made his debut for India in 1996 in a Test match. The name of his book is the tribute to his knock against Australia at Eden Gardens in Kolkata. He retired from the game in 2012.

88 - C



Explanation:

$AB = 4 \times 2 = 8 \text{ cm}$, $AC = 7 \times 2 = 14 \text{ cm}$

In Triangle PAB and triangle QAC-

$\angle APB = \angle AQC$ (each 90°)

$\angle PAB = \angle QAC$ (opposite angle)

$\angle PBA = \angle ACQ$ (alternate angle)

So,

$\Delta PAB \cong \Delta QAC$

$$\frac{AP}{AQ} = \frac{AB}{AC}$$

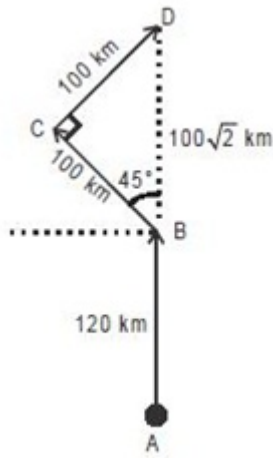
$$\frac{AP}{AQ} = \frac{8}{14} = \frac{4}{7}$$

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89 - D

Explanation: If a line is perpendicular to the horizontal plane then its horizontal trace coincides with its top view which is a point. It has no vertical trace because the line is parallel to vertical plane the line will not touch the vertical plane.

90 - D



Explanation:

$$AD = AB + BD$$

$$= 120 + 100\sqrt{2} = 261.4 \text{ km}$$

91 - B

Explanation: Dr. Poonam Khetrapal Singh has become the first woman to assume the office of WHO Regional Director for South-East Asia. She served for over two decades as a civil servant in India as member of the Indian Administrative Services. She was the Health Secretary of the State of Punjab.

92 - A

Explanation: Tangents are the lines which touch the curves at only one point. Normals are perpendiculars of tangents. As in the circles first we found the normal using foci (centre in circle) and then perpendicular at given point gives tangent.

93 - A

Explanation: State Bank of India (SBI) has emerged as most patriotic brand of India according to a survey, followed by Tata Motors, Patanjali, Reliance Jio and BSNL. The survey conducted by UK-based online market research and data analytics firm YouGov. It is an international Internet-based market research and data analytics firm, headquartered in the UK, with operations in Europe, North America, the Middle East and Asia-Pacific.

94 - D

Explanation: In perspective projection the projectors are not parallel to each other and inclined to picture plane. In orthographic view the projectors are parallel to each other and perpendicular to plane of projection.

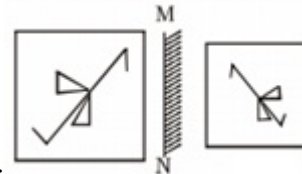
95 - C

Explanation: Assumption I is not implicit as there is nothing in the statement that suggests a link between the dress and the performance of the employees. Similarly, it cannot be inferred from the statement II that there is a link between a dress code and employee behavior. Thus, neither assumption I nor II is implicit.

96 - B

Explanation: A leader is thin continuous line with one end terminating in arrowhead and the other with a period. While dimensioning arcs or circles, leaders are aligned to the radius of the respective arcs or circles.

97 - D



Explanation:

The correct mirror image is (D).

98 - D

Explanation: Sum of 100 items = $49 \times 100 = 4900$

Sum of items added = $60 + 70 + 80 = 210$

Sum of items replaced = $40 + 20 + 50 = 110$

New sum = $4900 + 210 - 110 = 5000$

Correct mean = $\frac{5000}{100} = 50$

99 - C

Explanation: Neither of the two assumptions is implicit in the given statement. It cannot be assumed that Peterson himself posted any content on twitter that lead to his ouster. Similarly, there is nothing in the statement to suggest that it would be very difficult for him to comeback now.

100 - B

Explanation: For $x^3 + 4x^2 - 7x + 12$ to be divisible by $x + 3$,

remainder should be zero when divisible by $x + 3$

$$\Rightarrow x + 3 = 0$$

So, $x = -3$ substituted in the given polynomial

At $x = -3$

$$x^3 + 4x^2 - 7x + 12 = (-3)^3 + 4(-3)^2 - 7(-3) + 12$$

$$x^3 + 4x^2 - 7x + 12 = 42$$

Hence 42 must be subtracted from the given polynomial to make it perfectly divisible by $x + 3$