Analytical Aptitude Question & Answers

Question 1. A and B together can finish a work in 30 days. They worked for it for 20 days and then B left the work. The remaining work was done by A alone in 20 days more. In how many days can A alone finish the work?

a. 48 days

b. 50 days

c. 54 days

d. 60 days

Ans. (d.)

Explanation: (A + B)'s combined efficiency = 100/30 = (10/3)%.

The work done by both in 20 days= 20*(10/3) = (200/3)%.

Remaining work = 100 – (200/3) = (100/3)%.

If A does (100/3)% of work in 20 days, then A's one day work = (100/60)%.

Hence, A will alone finish the work in = 100/(100/60) = 60 days.

Question 2. The centroid of an equilateral triangle ABC is G. If AB is 6 cms, the length of AG is

a. $\sqrt{3}$ cm

b. $2\sqrt{3}$ cm

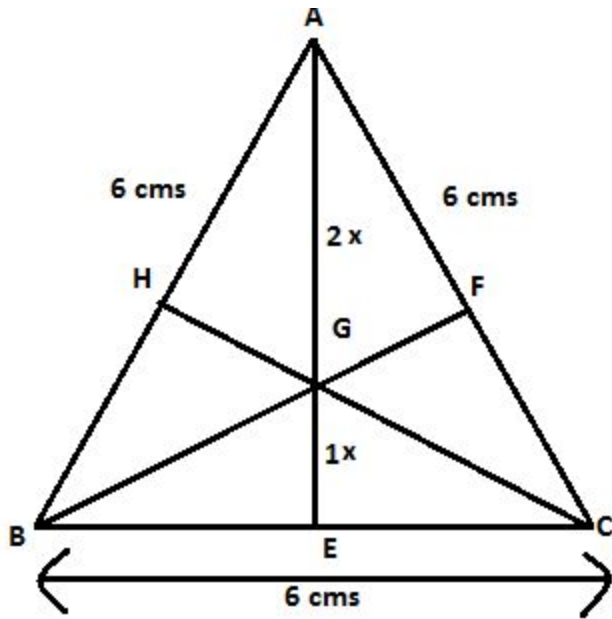c. $3\sqrt{2}$ cm

d. $2\sqrt{2}$ cm

Ans. (b.)

Explanation: When the medians of a triangle converges at a point, that point is known as centroid. In equilateral triangle, every median is perpendicular to the base line and centroid divides the median into 2: 1.

Hence, in triangle AEC,

$AE = \sqrt{6^2 - 3^2} = 3\sqrt{3}$ cms.

$\Rightarrow AG = (2/3)(AE) = 2\sqrt{3}$ cms.

Question 3. A merchant changed his trade discount from 25% to 15%. This would increase selling price by

a. 3⅓%

b. 6⅛%

c. 13⅓%

d. 16⅓%

Ans. (c.)

Explanation: For discount of 25% to 15%, selling price moves from 75% to 85%.

Hence, % change in SP= (85-75)*100/75 = 13⅓%.

Question 4. If 177 is divided into 3 parts in the ratio 1/2 : 2/3: 4/5, then the second part is

a. 75

b. 45

c. 72

d. 60

Ans. (d.)

Explanation: ½ : 2/3 : 4/5 == 15 : 20 : 24.

15x + 20x + 24x = 177; => 59x = 177;

x = 3;

Hence, the second part = 3*20 = 60.

Question 5. If percentage of profit made,when an article is sold for Rs.78, is twice as when it is sold for Rs.69, the cost price of the article is

a. Rs. 49

b. Rs. 51

c. Rs. 57

d. Rs. 60

Ans. (d.)

Explanation: Suppose, the cost price = Rs. x;

(78 – x)/x = 2* (69 – x) /x;

78 –x = 2*(69 – x);

78 –x = 138 – 2x;

x = 138 – 78 = 60.

Question 6. The ratio between Ram's age and Rahim's age is 10:11. What is the age of Rahim in percentage of Ram's age

a. $109\frac{1}{11}$%

b. 110%

c. $111^1/_9$ %

d 111%

Ans. (b.)

Explanation: % age of Rahim to Ram = 11*100/10 = 110%.

Question 7.Gautam travels 160 kms at 32 kmph and returns at 40 kmph. Then average speed is https://www.freshersnow.com/previous-year-question-papers/

a. 72 kmph

b. 71.11 kmph

c. 36 kmph

d. 35.55 kmph

Ans. (d.)

Explanation: The total traveled distance = 320 kms.

Total time taken in up and down = (160/32) + (160/40) = 5 + 4 = 9 hrs.

Hence, the average speed = 320/9 = 35.55 Kmh.

Question 8.If x=3/2, then the value of 27x³-54x²+36x-11 is

a. $11\frac{3}{8}$

b. $11\frac{5}{8}$

c. $12\frac{3}{8}$

d. 12⅝

Ans. (d.)

Explanation:

$27x^3 - 54x^2 + 36x - 11$

$Put\ the\ value\ of\ x = \dfrac{3}{2}\ in\ the\ above\ expression -$

$= 27(\dfrac{3}{2})^3 - 54(\dfrac{3}{2})^2 + 36 * \dfrac{3}{2} - 11;$

$= 27 * (\dfrac{27}{8}) - 54(\dfrac{9}{4}) + \dfrac{108}{2} - 11;$

$= \dfrac{729}{8} - \dfrac{486}{4} + 54 - 11;$

$= \dfrac{729 - 486 * 2}{8} + 43;$

$= 43 - \dfrac{243}{8};$

$= \dfrac{43 * 8 - 243}{8} = \dfrac{101}{8} = 12\dfrac{5}{8}$

Question 9.If a+b+c = 6 and ab+bc+ca = 11, then the value of bc(b+c) + ca(c+a) +ab(a+b) +3abc is

a. 33

b. 66

c. 55

d. 23

Ans. (b.)

Explanation: bc(b+c) + ca(c+a) +ab(a+b) +3abc = bc(b+c) + abc + ca(c+a) + abc + ab(a+b) +abc;

= bc (a + b + c) + ca (a + b + c) + ab (a + b + c);

= (a + b + c) (ab + bc + ca) = 6 * 11= 66.

Question 10.If the angles of a triangle are in the ratio of 2:3:4, then the difference of the measure of greatest angle and smallest angle is

a. 20°

b. 30°

c. 40°

d. 50°

Ans. (c.)

Explanation: As per the given ratio, the angles will be 40, 60, and 80.

Hence, the difference between the smallest and largest number = 80 – 40= 40 degrees.

Question 11.In ΔABC, ∠A = 90°, AD ⊥ BC and AD = BD = 2 cm. The length of CD is

a. 3 cm

b. 3.5 cm

c. 3.2 cm

d. 2 cm

Ans. (d.)

Explanation: In a rectangular triangle, if the a perpendicular is drawn to the hypotenuse, then it will bisect it and length of all the three lines will be same. Hence, CD = 2 cms.

Question 12. If tan45 = cotθ, then the value of θ in radians in?

a. Π/4

b. Π/9

c. Π/2

d. Π/12

Ans. (a.)

Explanation: $\tan 45 = \tan (90 - \theta)$;

$45 = 90 - \theta$; $\Rightarrow \theta = 45$;

$\Theta = 45 * pi/180 = pi/4$;

Question 13.$(2^{51} + 2^{52}+2^{53}+2^{54}+2^{55})$ is divisible by

a. 23

b. 58

c. 124

d. 127

Ans. (c.)

Explanation: $(2^{51} + 2^{52}+2^{53}+2^{54}+2^{55}) = 2^{51}*(1 + 2 + 4 + 8 + 16) = 31*2^{51}=124 * 2^{49}$;

Hence, option (c.) is the correct one.

Question 14.The average of 12 numbers is 9. If each number is multiplied by 2 and added to 3, the average of the new set of numbers is

a. 9

b. 18

c. 21

d. 27

Ans. (b.)

Explanation: The sum of all 12 numbers = 12*9 = 108;

The required average = (108*2 +3)/12 = 18.25;

Question 15.

If $\left(a + \dfrac{1}{a}\right)^2 = 3$, then the value of $a^6 - \dfrac{1}{a^6}$ will be

a. 1

b. 3

c. 0

d. 2

Ans. (c.)

Explanation:

$(a + \dfrac{1}{a})^2 = a^2 + \dfrac{1}{a^2} + 2 = 3;$

$a^2 + \dfrac{1}{a^2} = 1; - - - - - eq(i.)$

$(a - \dfrac{1}{a})^2 = -1; - - - - - - - eq.(ii)$

$a + \dfrac{1}{a} = \sqrt{3}; - - - eq.(iii)$

$a^6 - \dfrac{1}{a^6} = (a - \dfrac{1}{a})(a + \dfrac{1}{a})(a^2 + \dfrac{1}{a^2} + 1)(a^2 + \dfrac{1}{a^2} - 1);$

From eq(i),

$a^6 - \dfrac{1}{a^6} = 0;$