CMAT 2021 Slot 2

Quantitative Techniques and Data Interpretation

Instructions

For the following questions answer them individually

Question 1

Given: Anuj takes 1 day to complete a job. Bharat takes twice the time as Anuj to complete the same job. Chetan takes twice the time as Bharat to complete that job. Dhiraj takes twice the time as Chetan to complete that job.

(A) Chetan and Dhirgj will take 8/3 days to complete the work
(B) The second fastest pair to complete the work is Anuj and Dhiraj
(C) The second slowest pair to complete the work is Bharat and Dhiraj
(D) Bharat and Dhiraj will take 4/3 days to complete the work

A (A), (B) and (C) only

B (A) and (D) only

C (A) and (C) only

D (A) only

Answer: C

Question 2

How many ten-digit numbers can be formed using all the digits of 2435753228 such that odd digits appear only in even places?

A $2!3!5!$

B $(5!)^2$

C $\frac{(5!)^2}{3!}$

D $\frac{(5!)^2}{3!(2!)^2}$

Answer: D

Question 3

Given below are two statements
Statement I : $(543)_6$ **is equivalent to** $(317)_s$
Statement II : The last 4 bits in the binary representation of a multiple of 16 is 1000.
In light of the above statements, choose the correct answer from the options given below

A Both Statement I and Statement II are true

B Both Statement I and Statement II are false

C Statement I is true but Statement II is false

D Statement I is false but Statement II is true

Answer: C

Question 4

During the next year, the probability that a Company A releases a mobile is 0.7. The probability that mobile is a success. given that it is released by the Company is 0.8. The probability that a mobile is a success and released by a Company B is 0.28. A mobile released by either Company A or Company B during the next one year is a success. Find the probability that it is released by Company A.

A $\frac{1}{3}$

B $\frac{1}{2}$

C $\frac{2}{3}$

D $\frac{3}{4}$

Answer: C

Question 5

If a is $\frac{3}{2}$ times of b, b is $\frac{3}{4}$th of c and d is $\frac{1}{4}$th of c, the ratio of a and d is

A 8:3

B 9:1

C 8:1

D 9:2

Answer: D

Question 6

Pipe X can fill a tank in 12 hours and pipe Y can empty the tank in 18 hours. Both pipes are opened at 8 am and after some time Y is closed, and the tank is full at 10 pm on the same day. At what time was pipe Y closed?

A 1 pm

B 10 am

C 11 am

D 12 noon

Answer: C

Question 7

The price of an apple is twice that of an orange. The price of an orange is thrice that of a banana.If the price of an apple increases by 10%, price of an orange increases by 30% and the price of a banana increases by 20%. Find the percentage increase in the price of 20 apples, 20 oranges and 20 bananas.

A 19%

B 17%

C 15%

D 13%

Answer: B

Question 8

The difference between the compound interest and simple interest for two years on a certain sum at a certain rate of interest is Rs. 64. The compound interest for two years is Rs. 704. The principal is

A 800

B 1600

C 2400

D 3200

Answer: B

Question 9

A vessel has 500 litres of milk. 50 litres of milk is replaced with 50 litres of water in this vessel. If this operation is repeated another 2 more times, whatis the percentage of milk in the vessel at the end?

A 70.0

B 72.9

C 80.0

D 81.0

Answer: B

Question 10

A started a business with Rs. 50000. After three months, B joins with an investment of Rs. 60000 and A withdraws Rs. 10000 out of his capital. Three months later, B brought in Rs. 20000 more. At the end of the year, what should be the ratio in which they A and B share the profits?

A 22:15

B 13:22

C 17:22

D 15:22

Answer: C

Question 11

In a company there are 252 engineers, in which the ratio of the number of electronics engineers and computer engineers is 2 : 1. The ratio of the number of electronics engineers and computer engineers becomes 1:1 after recruitment of some more computer engineers. The average age of all the engineers is now 22 years and the average age of the computer engineers is 2 years less than the averageage of electronics engineers.

(A) The average age (in years) of electronics engineers is 21
(B) The average age (in years) of computer engineers is 21
(C) The average age (in years) of electronics engineers is 23
(D) The average age (in years) of electronics engineers is 25
(E) The average age (in years) of computer engineers is 23
Choose the correct answer from the options given below:

A (A) and (E)only

B (B) and (C) only

C (D) and (E) only

D (E) only

Answer: B

Question 12

In triangle PQR. PS is perpendicular to QR and S divides QR in the ratio of 3 : 1 internally. If PQ=21 and PR =9,find QR.

A $18\sqrt{5}$

B $16\sqrt{5}$

C $15\sqrt{5}$

D $12\sqrt{5}$

Answer: D

Question 13

In a 1000 metre race, Rahul reaches the finishing line 5 seconds before than Raj and beats Raj by 50 metre. What is Rahul's speed (in m/s)?

A $11\frac{9}{19}$

B $9\frac{9}{19}$

C $10\frac{10}{19}$

D $9\frac{10}{19}$

Answer: C

Question 14

A shopkeeper claims to sell rice at cost price. He uses a false weight with the intention of selling rice at 25% profit. After selling Rice to a customer, he realizes that the customer has paid 10% less than what he should have paid. What is the actual profit percentage made by the shopkeeper?

A 6.25%

B 10%

C 12.5%

D 15%

Answer: C

Question 15

Meera and Sarika attempted to solve a quadratic equation in x. Sarika made a mistake in reading the coefficient of x and obtained the roots as 12 and 16. Meera made a mistake in reading the constant term of the equation. She obtained the roots as 22 and 6. The corrects root(s) is (are) :

A -16

B -12

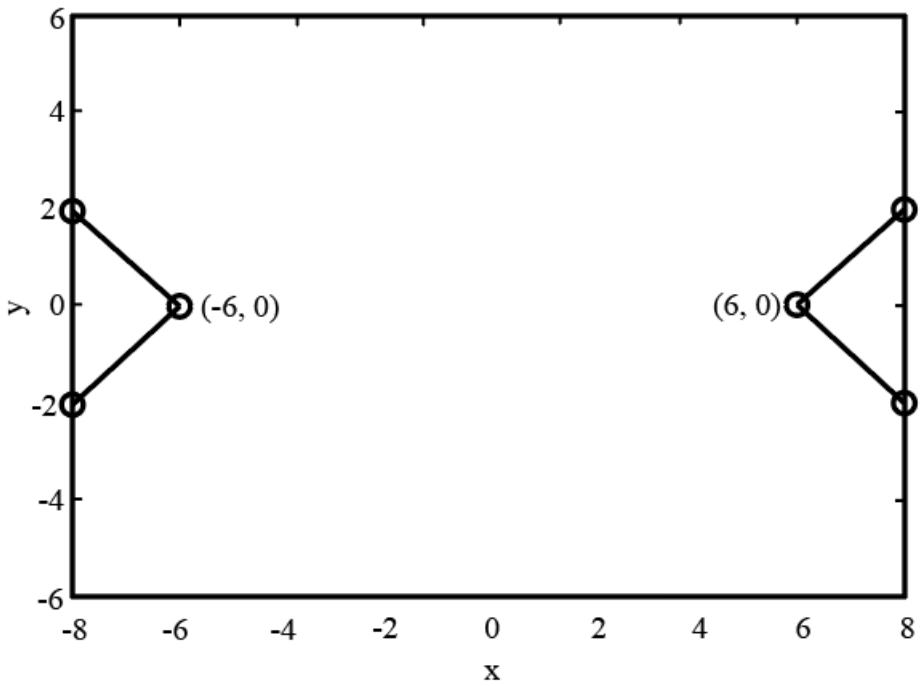
C 12

D 16

Answer: C

Question 16

Which of the following equations best describes the graph given below?



A $|x+y|-|x-y|=6$

B $|x-y|+|x+y|=10$

C $|x|-|y|=6$

D $|x+y|-|x-y|=0$

Answer: C

Question 17

In a company, the average salary of the boy is Rs. 50000. The average salary of all the employees is Rs. 48000. There are 80 boys in the company and the average salary of the girl is Rs. 40000. What is the number of girls working in the company?

A 12

B 15

C 20

D 24

Answer: C

Question 18

A roller is 4m long and has a diameter of 0.7m. It takes exactly 2000 rotations of the roller to level a road. If the cost of using the roller is Rs.4 per square metres, then the total cost of levelling the roadis :

Assume, $\pi = \frac{22}{7}$

A Rs.17600

B Rs.35200

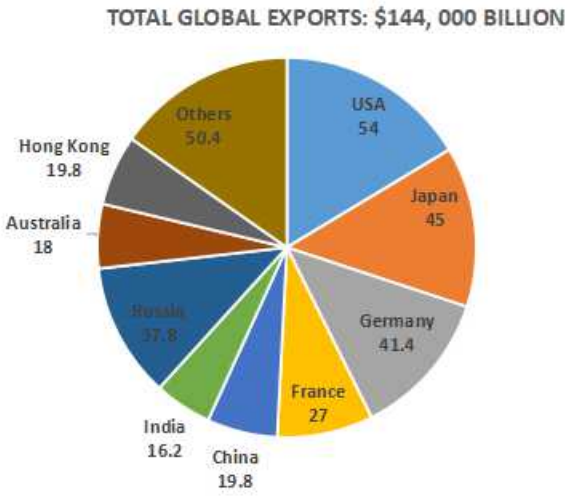
C Rs.70400

D Rs.140800

Answer: C

Instructions

Study the pie chart and answer the questions that follow:



Note : The value of exports represents the angle corresponding to each country in the pie chart.

Question 19

The ratio of the value of exports between the total exports of USA and Japan to the total exports of Australia and France is

A 5:9

B 9:5

C 11:5

D 5:11

Answer: C

Question 20

What is number of countries whose exports are more than the average exports per country? (Assume'Others' as a single country)

A 4

B 5

C 6

D 7

Answer: B

Question 21

By how much does the value of the exports of Japan exceed that of Australia?

A $ 10800 billion

B $ 21600 billion

C $ 38880 billion

D $ 49680 billion

Answer: B

Question 22

What is value of total exports of USA and France as a percentage of the total exports of Japan, China, Russia and Hongkong?

A 64.9764

B 65.5764

C 66.1574

D 66.1764

Answer: D

Instructions

For the following questions answer them individually

Question 23

The minimum value of $\frac{3(6+x)(x+12)}{2(4+x)}$ **, Where** $x > -4$ **is**

A 18

B 27

C 36

D 45

Answer: B

Question 24

Let $g(x) + g(\frac{1}{x}) = 1 + 3x$. Find the value of $g(3)$.

A -4

B $-\frac{1}{2}$

C $\frac{1}{2}$

D 3

Answer: E

Question 25

Find the sum ofthe following series (with infinite terms):
$2\sqrt{2}, \frac{4}{\sqrt{3}}, \frac{4\sqrt{2}}{3}, ...$

A $2\sqrt{3}(\sqrt{3} + \sqrt{2})$

B $2\sqrt{3}(\sqrt{3} - \sqrt{2})$

C $2\sqrt{6}(\sqrt{3} + \sqrt{2})$

D $2\sqrt{6}(\sqrt{3} - \sqrt{2})$

Answer: C

Logical Reasoning

Instructions
For the following questions answer them individually

Question 26

In a certain language
ABCD is coded as CABF
FGHI is coded as HFGK
UVWkX is coded as WUVZ
How is KLMN coded?

A KLMP

B MKLP

C MNOP

D MNPO