

CAT Quant Questions with Solution

Question 1: Two pipes A and B can fill a cistern in 120 minutes and 150 minutes respectively. There is also outlet C. If all the three pipes are opened together, the cistern gets filled in 100 minutes. How much time will be taken by C to empty the full tank?

Answer: 3 hours and 20 mins

Explanation: Let the capacity of the cistern be 600 units.

From the given data, the efficiencies of pipes A and B are 5 units/min and 4 units/min respectively.

Let the efficiency of outlet pipe C be 'k' units/min.

Given the time taken to fill the cistern when all the three pipes are open = 100 minutes

⇒ Efficiency of pipes × time taken = Capacity of cistern

⇒ $(5 + 4 - k) \times 100 = 600$

⇒ $9 - k = 6$

⇒ $k = 3$

Therefore the time taken (t) by pipe C to empty the cistern = Capacity of the cistern ÷ efficiency of pipe C

⇒ $t = 600 \div 3 = 200$ minutes = 3 hrs 20 min

Question 2: Sanjay went 20 km at an average speed of 15 km/hr and again travels 15 km at an average speed of 12 km/hr. Find his average speed.

Answer: 13.54 km/hr

Explanation: Total distance = 20 + 15 = 35 km $20/15 + 15/12$

Total Time = $(20/15 + 15/12) = 155/60$ Hours

Therefore, Required average speed

= Total distance / Total time

= $(35/155)/60$

= 13.54 km/hr

= 13.54 km/hr

Question 3: The number of integral values of x that satisfy $||x - 6| - |x + 3|| \leq 5$ is

Answer: 6

Explanation: The given expression can be interpreted to mean that the distance (along the number line) from ' x ' to '6' should differ from the distance from ' x ' to '-3' by at most units 5. Since 6 and -3, themselves are 9 units apart, no values of x to the left of -3 or the right of 6 can satisfy the given condition. However, between -3 and 6, we can see that any x , that is at least 2 units away from both -3 and 6 will satisfy.

Therefore -1, 0, 1, 2, 3, and 4 will satisfy the given condition. i.e., a total of six possible values.

Question 4: What will be the value of n , if $\sqrt{2^n} = 64$?

Answer: 12

Explanation: $2^{n/2} = 2^6$
 $n/2 = 6$, means $n = 12$

Question 5: What will be the value of x . $8^{1.3} \times 4^{0.6} \times 16^{0.2} = 2^x$

Answer: 5.9

Explanation : $2^{3.9} \times 2^{1.2} \times 2^{0.8}$
 $= 2^{3.9+1.2+0.8}$
 $= 2^{5.9}$