GRE

Quant Reasoning Assessment

Numbers, Mixtures, Word Problems

Answer Explanations

Question types: Numbers, Word problems

1. Answer: Option B

Explanation:

Let the smaller number be x. Then larger number = (x + 1365).

$\therefore$ x + 1365 = 6x + 15

$\Rightarrow$ 5x = 1350

$\Rightarrow$ x = 270

$\therefore$ Smaller number = 270.

2. Answer: Option D

Explanation:

(4 + 5 + 2) - (1 + 6 + 3) = 1, not divisible by 11.

(2 + 6 + 4) - (4 + 5 + 2) = 1, not divisible by 11.

(4 + 6 + 1) - (2 + 5 + 3) = 1, not divisible by 11.

(4 + 6 + 1) - (2 + 5 + 4) = 0, So, 415624 is divisible by 11.

(5

3. Answer: Option D

Explanation:

24 = 3 x8, where 3 and 8 co-prime.

Clearly, 35718 is not divisible by 8, as 718 is not divisible by 8.

Similarly, 63810 is not divisible by 8 and 537804 is not divisible by 8.

Sum of digits = (3 + 1 + 2 + 5 + 7 + 3 + 6) = 27, which is divisible by 3.

Also, 736 is divisible by 8.

$\therefore$ 3125736 is divisible by (3 x 8), i.e., 24.

4. Answer: Option D

Explanation:

Let the number be x and on dividing x by 5, we get k as quotient and 3 as remainder.

$\therefore$ $x = 5k + 3$

$\Rightarrow$ $x^2 = (5k + 3)^2$

$= (25k^2 + 30k + 9)$

$= 5(5k^2 + 6k + 1) + 4$

$\therefore$ On dividing x^2 by 5, we get 4 as remainder.

5. Answer: Option B

Explanation:

3-digit number divisible by 6 are: 102, 108, 114,... , 996

This is an A.P. in which a = 102, d = 6 and l = 996

Let the number of terms be n. Then $t_n = 996$.
$\therefore$ a + (n - 1)d = 996
$\Rightarrow$ 102 + (n - 1) x 6 = 996
$\Rightarrow$ 6 x (n - 1) = 894
$\Rightarrow$ (n - 1) = 149
$\Rightarrow$ n = 150
$\therefore$ Number of terms = 150

6. Answer: D
We first determine the number of integers less than 5,000 that are evenly divisible by 15. This can be found by
dividing 4,999 by 15:
= 4,999/15
= 333 integers

Now we will determine the number of integers evenly divisible by 21:
= 4,999/21
= 238 integers

some numbers will be evenly divisible by BOTH 15 and 21. The least common multiple of 15 and 21 is 105.
This means that every number that is evenly divisible by 105 will be divisible by BOTH 15 and 21. Now we will
determine the number of integers evenly divisible by 105:
= 4,999/105
= 47 integers

Therefore the positive integers less than 5000 that are not evenly divisible by 15 or 21 are
4999-(333+238-
47) =4475
d is the answer.

7. Answer: Option D
Explanation:
Required sum = (2 + 3 + 5 + 7 + 11) = 28.
Note: 1 is not a prime number.
Definition: A prime number (or a prime) is a natural number that has exactly two distinct natural number divisors: 1 and itself.

8. Answer: Option C

Explanation:

Let the required fraction be x. Then $\frac{1}{x} - x = \frac{9}{20}$

$\therefore \quad \frac{1 - x^2}{x} = \frac{9}{20}$

$\Rightarrow \quad 20 - 20x^2 = 9x$

$\Rightarrow \quad 20x^2 + 9x - 20 = 0$

$\Rightarrow \quad 20x^2 + 25x - 16x - 20 = 0$

$\Rightarrow \quad 5x(4x + 5) - 4(4x + 5) = 0$

$\Rightarrow \quad (4x + 5)(5x - 4) = 0$

$x = \frac{4}{5}$

9. Answer: Option D

Explanation:

Let the number be x and on dividing x by 5, we get k as quotient and 3 as remainder.

$\therefore \quad x = 5k + 3$

$\Rightarrow \quad x^2 = (5k + 3)^2$

$= (25k^2 + 30k + 9)$

$= 5(5k^2 + 6k + 1) + 4$

$\therefore$ On dividing x^2 by 5, we get 4 as remainder.

10. Answer: Option A

Explanation:

Given number = 97215x6

$(6 + 5 + 2 + 9) - (x + 1 + 7) = (14 - x)$, which must be divisible by 11.

$\therefore \quad x = 3$

11. Answer and Analysis

The correct answer is 8. (To gain credit for answering the question correctly you must type the number 17 in the numeric-entry box.) Given that 2x is a multiple of 5, x must be a multiple of 2.5. The total number of such multiples from 2.5 to 50 is 20. Given that x is greater than 5 and that $2x + 1 < 100$, you must eliminate 2.5, 5.0, and 50 from the list of 20 multiples, which leaves 17 possible values for x.

12. Answer and Analysis

The correct answer is (A). You would gain credit for answering the question correctly by selecting this and only this one choice. (A) is correct because the product of 2 and any positive integer is always a multiple of 2.
(B) is incorrect because any odd integer multiplied by itself any number of times yields an odd integer, which of course cannot be a multiple of 2. The expression in (C) represents a multiple of 2 only when p is even. Conversely, the expression in (D) represents a multiple of 2 only when p is odd.

13. Answer and Analysis

The correct response is (C). You can express the base number 18 as the product of its prime factors:

$18^{15} = 3^{15} \times 3^{15} \times 2^{15} = 3^{30} \times 2^{15}$

3^{30} is clearly greater in value than 2^{15}. Thus, the greatest possible value of n is 30.

14. (C) Looking at choices (m–n) is divisible by 5, as both m and n are multiples of 5, and five can be taken common out of m and n. Now second choice can be written as (m + n) (m – n) and as per the logic above, 5 can be taken common out of both (m – n) and (m + n), therefore 5 × 5 will be common, which will make it divisible by 25. The third is (m + n) divisible by 10, which may not be always correct, for example 10+15 = 25, not divisible by 10, therefore this is the answer.

15. (D) (P, Q) can be (1, 64), (2, 32), (4, 16), (8, 8). Hence P + Q cannot be 35.

16. Answer : D

Explanation:

Every sixth integer is the multiple of 6 and every ninth integer is a multiple of 9 so in a large interval there will be many more multiples of 6. But in a very small interval there must be none or possibly just one of each. Let x = 1 between 100 and 101 there are no multiples of 6 than there are of 9 therefore option (c) cannot be the correct answer, therefore the answer is option (d)

17. Answer: B

Explanation:

Since 5 and 7 are the only primes whose sum is 12. P could be 5 0r 7. In either case p is less than 8 and so the quantity in Column B is greater all the time. Note that although 1 + 11 = 12, p cannot be 11 because 1 is not prime, therefore the answer would be option (b).

18. Answer : D

Explanation:

There are several ways to do this. Plug in a number of x. If x = 2, column A is 2π
Which is slightly more than 6 and column B is $2^2 = 4$. Column A is greater; therefore option

B and C should be eliminated. Column A be greater? If the only other number you try is x = 3. You will think so because $3^2 = 9$, but $3\pi > 9$. But remember x does not have to be an integer. $3.9^2 > 15$, whereas $3.9\ \pi < 4\pi$, which is a little over 12. Just think could $\pi x = x^2$? Yes, if $x = \pi$. Must be $x = \pi$? No. Divide each side by x. Now column A is π and Column B is x. Which is bigger π or x ? We cannot tell, therefore the answer would be option (d).

Section II: Time and Distance

19. Answer: Option B

Explanation:

Speed = $\left(\frac{600}{5 \text{ x } 60}\right)$m/sec.

= 2 m/sec.

Converting m/sec to km/hr (see important formulas section)

= $\left(2 \text{ x } \frac{18}{5}\right)$km/hr

= 7.2 km/hr.

20. Answer: Option D

Explanation:

Distance = (240 x 5) = 1200 km.

$\therefore$ Required speed = $\left(1200 \text{ x } \frac{3}{5}\right)$km/hr = 720 km/hr.

21. Answer: Option A

Explanation:

Let the actual distance travelled be x km.

Then, $\frac{x}{10} = \frac{x + 20}{14}$

$\Rightarrow 14x = 10x + 200$

$\Rightarrow 4x = 200$

$\Rightarrow x = 50$ km.

22. Answer: Option C

Explanation:

Let speed of the car be x kmph.

Then, speed of the train = $\frac{150}{100}x = \left(\frac{3}{2}x\right)$kmph.

$\therefore \frac{75}{x} - \frac{75}{(3/2)x} = \frac{125}{10 \text{ x } 60}$

$\Rightarrow \frac{75}{x} - \frac{50}{x} = \frac{5}{24}$

$\Rightarrow x = \left(\frac{25 \text{ x} 24}{5}\right) = 120$ kmph.

23. Answer: Option B

Explanation:

$\frac{(1/2)x}{21} + \frac{(1/2)x}{24} = 10$

$\Rightarrow \frac{x}{21} + \frac{x}{24} = 20$

$\Rightarrow 15x = 168 \text{ x } 20$

$\Rightarrow x = \left(\frac{168 \text{ x } 20}{15}\right) = 224$ km.

24. Answer: Option D

Explanation:

Let the speed of two trains be 7x and 8x km/hr.

Then, $8x = \left(\frac{400}{4}\right) = 100$

$\Rightarrow x = \left(\frac{100}{8}\right) = 12.5$

$\therefore$ Speed of first train = (7 x 12.5) km/hr = 87.5 km/hr.

25. Answer: Option C

Explanation:

Total time taken = $\left(\frac{160}{64} + \frac{160}{80}\right)$hrs. $= \frac{9}{2}$ hrs.

$\therefore$ Average speed = $\left(320 \text{ x } \frac{2}{9}\right)$km/hr = 71.11 km/hr.

26. Answer: Option D

Explanation:

Time taken = 1 hr 40 min 48 sec = 1 hr $40\frac{4}{5}$ min = $1\frac{51}{75}$ hrs = $\frac{126}{75}$ hrs.

Let the actual speed be x km/hr.

Then, $\frac{5}{7}$x x $\frac{126}{75}$ = 42

$\Rightarrow$ x = $\left(\frac{42 \text{ x } 7 \text{ x } 75}{5 \text{ x } 126}\right)$ = 35 km/hr.

27. Answer: Option A

Explanation:

Let Andy's speed be x km/hr.

Then, $\frac{30}{x}$ - $\frac{30}{2x}$ = 3

$\Rightarrow$ 6x = 30

$\Rightarrow$ x = 5 km/hr.

28. Answer: Option C

Explanation:

Let the distance travelled by x km.

Then, $\frac{x}{10}$ - $\frac{x}{15}$ = 2

$\Rightarrow$ 3x - 2x = 60

$\Rightarrow$ x = 60 km.

Time taken to travel 60 km at 10 km/hr = $\left(\frac{60}{10}\right)_{\text{hrs}}$ = 6 hrs.

So, Robert started 6 hours before 2 P.M. i.e., at 8 A.M.

$\therefore$ Required speed = $\left(\frac{60}{5}\right)_{\text{kmph.}}$ = 12 kmph.

29. Answer: Option C

Explanation:

Let the speed of the train be x km/hr and that of the car be y km/hr.

Then, $\frac{120}{x} + \frac{480}{y} = 8$ $\Rightarrow \frac{1}{x} + \frac{4}{y} = \frac{1}{15}$ ....(i)

And, $\underline{200} + \underline{400} = \underline{25}$ $\Rightarrow \underline{1} + \underline{2} = \underline{1}$ ....(ii)

x Y 3 x y 24

Solving (i) and (ii), we get: x = 60 and y = 80.

$\therefore$ Ratio of speeds = 60 : 80 = 3 : 4.

30. Answer: Option C

Explanation:

Let the distance travelled on foot be x km.

Then, distance travelled on bicycle = (61 -x) km.

So, $\frac{x}{4} + \frac{(61 - x)}{9} = 9$

$\Rightarrow 9x + 4(61 - x) = 9 \times 36$

$\Rightarrow 5x = 80$

$\Rightarrow$ x = 16 km.

31. Answer: Option D

Explanation:

Let distance = x km and usual rate = y kmph.

Then, $\frac{x}{y} - \frac{x}{y+3} = \frac{40}{60} \Rightarrow 2y(y + 3) = 9x$ ....(i)

And, $\frac{x}{y-2} - \frac{x}{y} = \frac{40}{60} \Rightarrow y(y - 2) = 3x$ ....(ii)

On dividing (i) by (ii), we get: x = 40.

32. Correct Answer: E

Explanation:

If an object travels at 5 feet per second it covers 5x60 feet in one minute, and 5x60x60 feet in one hour. Answer = 18000 (E)

33. Correct Answer: 30

Explanation:

Speed = distance /time; 54 = distance / 5

Distance = 54 x 5km

At 60 km/hr

60 = 54 x 5/time in hours

Time in hours = 54 x 5/60 = 4.5 hours

The difference in the time = 0.5 hours = 30 minutes

34. Correct Answer: 2

Explanation:

Speed = distance/time; time = distance/speed

Car M traveling at 60mph covers 10 miles in 10/60 hours.

In the same time, car N traveling at 48mph will cover 48 x 10/60 miles= 8

Car N will therefore still have 2 miles to travel.

35. Correct Answer: A

Explanation:

Draw a sketch. Put a point for the city. Draw a circle radius 2 centered on the city on which the beach resort can lie. Draw a circle radius 10 centered on the city, on which the sports center can lie. Wherever you put the resort and the sports center on these circles, they can never be closer than 8 kilometers, which is the shortest distance between the circles.

36. Correct Answer: B

Explanation:

There is no need to calculate here. But neither should you fall into the trap. The average speed is not 45. Since Pedro spends more time on the leg of the trip when he is traveling at 40km/hour, than when he travels at 50, the average speed will be closer to 40 than it is to 50. This means the average value must be less than 45. (If you want to confirm this then you can use the formula [average speed = total distance / total time], but you will have to pick a value for the distance (say 20 km) and then work out the time for each leg)

Section III: TIME & WORK

37. Answer: Option B

Explanation:

(20 x 16) women can complete the work in 1 day.

$\therefore$ 1 woman's 1 day's work = $\frac{1}{320}$.

(16 x 15) men can complete the work in 1 day.

$\therefore$ 1 man's 1 day's work = $\frac{1}{240}$

So, required ratio $= \frac{1}{240} : \frac{1}{320}$

$$= \frac{1}{3} : \frac{1}{4}$$

= 4 : 3 (cross multiplied)

38. Melody can complete task in 15 days.
So, Melody 1 day's work = 1/15
Since Melody works for 5 days alone.
So she does 5/15 i.e 1/3rd of work after Suzanne Left.

Hence both of them completed together (1- 1/3) = 2/3rd of the work.
Let both of them work together for x days which is
equivalent to number of days after which Suzanne Left.
Suzanne 1 day's work = 1/10

x[(1/10)+(1/15)]=2/3
x*(5/30)=2/3
x=4
Hence answer is B.

39. Answer (C): In 100 sec, water inflow = 1.5 *100/60 = 2.5 gallons
remaining capacity = 5-2.5 = 2.5 gallons
Speed of water inflow when both faucets operates = 2.5 gallons/minute
time take to fill 2.5 gallons = 1 min = 60 sec
total time = 100 + 60=160seconds

40. Answer (B): Michelle's rate for doing the job is 1/40 of the job per minute. John's rate is 1/60 of the job per minute. Let the time they work be T. Then the sum of the work that Michelle does and the work that John does must equal one job:
1=(1/40)T + (1/60)T
This is most easily solved by multiplying by 40(60):
40(60) = [40(60)]/40 × T + [40(60)]/60 × T

2400 = 60T + 40T
T = 24 minutes

41. Answer (A): P The rate that Kelly works is 1/20 of the job per hour. Let the rate that Shelley works be R. To do one job in 8 hours we have
1 = 1/20(8) + R(8)

To solve for R, multiply by 20:

20 = 8 + 20R(8)
12 = 8(20)R
Therefore, R = 12/[8(20)] = 3/40 of the job per hour.
To type the entire manuscript alone, Shelley takes
T = W/R = 1/(3/40) = 40/3 = 13 1/3 or 13 hours and 20 minutes.

42. Answer (D): A completes the work in 30days. So A's one day work will be 1/30. Similarly B's one day work will be 1/45. Now, when they both work together, the amount of work they will do in one day= 1/30+ 1/45=1/18. So in one day they will finish 1/18 th part of total work. Hence they will finish the work in 18 days.

43. Answer: Option A

Explanation:
P can complete the work in (12 x 8) hrs. = 96 hrs.
Q can complete the work in (8 x 10) hrs. = 80 hrs.

$\therefore$ P's1 hour's work = $\frac{1}{96}$ and Q's 1 hour's work = $\frac{1}{80}$.

(P + Q)'s 1 hour's work = $\left(\frac{1}{96} + \frac{1}{80}\right) = \frac{11}{480}$.

So, both P and Q will finish the work in $\left(\frac{480}{11}\right)$ hrs.

$\therefore$ Number of days of 8 hours each = $\left(\frac{480}{11} \text{ x } \frac{1}{8}\right) = \frac{60}{11}$ days = $5\frac{5}{11}$ days.

44. Answer: Option B

Explanation:

Work done by X in 4 days = $\left(\frac{1}{20} \text{ x } 4\right) = \frac{1}{5}$.

Remaining work = $\left(1 - \frac{1}{5}\right) = \frac{4}{5}$.

(X + Y)'s 1 day's work = $\left(\frac{1}{20} + \frac{1}{12}\right) = \frac{8}{60} = \frac{2}{15}$.

Now, $\frac{2}{15}$ work is done by X and Y in 1 day.

So, $\frac{4}{5}$ work will be done by X and Y in $\left(\frac{15}{2} \text{ x } \frac{4}{5}\right)$ = 6 days.

Hence, total time taken = (6 + 4) days = 10 days.

45. Answer: Option B

Explanation:
Let 1 man's 1 day's work = x and 1 woman's 1 day's work = y.

Then, $4x + 6y = \frac{1}{8}$ and $3x + 7y = \frac{1}{10}$.

Solving the two equations, we get: $x = \frac{11}{400}$, $y = \frac{1}{400}$

$\therefore$ 1 woman's 1 day's work = $\frac{1}{400}$.

$\Rightarrow$ 10 women's 1 day's work = $\left(\frac{1}{400} \text{ x } 10\right) = \frac{1}{40}$.

Hence, 10 women will complete the work in 40 days..

46. Answer: Option C

Explanation:

Formula: If A can do a piece of work in n days, then A's 1 day's work = $\frac{1}{n}$.

(A + B + C)'s 1 day's work = $\left(\frac{1}{24} + \frac{1}{6} + \frac{1}{12}\right) = \frac{7}{24}$.

Formula: If A's 1 day's work = $\frac{1}{n}$, then A can finish the work in n days.

So, all the three together will complete the job in $\left(\frac{24}{7}\right)$ days = $3\frac{3}{7}$ days.

47. Answer: Option C

Explanation:
Let A's 1 day's work = x and B's 1 day's work = y.

Then, $x + y = \frac{1}{30}$ and $16x + 44y = 1$.

Solving these two equations, we get: $x = \underline{1}$ and $y = \underline{1}$

60 60

$\therefore$ B's 1 day's work = $\frac{1}{60}$.

Hence, B alone shall finish the whole work in 60 days.

48. Answer: Option B

Explanation:

Suppose A, B and C take x, $\frac{x}{2}$ And $\frac{x}{3}$ days respectively to finish the work.

Then, $\left(\frac{1}{x} + \frac{2}{x} + \frac{3}{x}\right) = \frac{1}{2}$

$\Rightarrow \frac{6}{x} = \frac{1}{2}$

$\Rightarrow$ x = 12.

So, B takes (12/2) = 6 days to finish the work.

49. Answer: Option C

Explanation:

(A + B)'s 1 day's work = $\frac{1}{10}$

C's 1 day's work = $\frac{1}{50}$

(A + B + C)'s 1 day's work = $\left(\frac{1}{10} + \frac{1}{50}\right) = \frac{6}{50} = \frac{3}{25}$. .... (i)

A's 1 day's work = (B + C)'s 1 day's work .... (ii)

From (i) and (ii), we get: 2 x (A's 1 day's work) = $\frac{3}{25}$

$\Rightarrow$ A's 1 day's work = $\frac{3}{50}$.

$\therefore$ B's 1 day's work $\left(\frac{1}{10} - \frac{3}{50}\right) = \frac{2}{50} = \frac{1}{25}$.

So, B alone could do the work in 25 days.

50. Answer: Option B

Explanation:

Ratio of times taken by Sakshi and Tanya = 125 : 100 = 5 : 4.

Suppose Tanya takes x days to do the work.

5 : 4 :: 20 : x $\Rightarrow$ x = $\left(\underline{4 \text{ x } 20}\right)$

5

$\Rightarrow$ x = 16 days.

Hence, Tanya takes 16 days to complete the work.

51. Answer: Option C

Explanation:

(B + C)'s 1 day's work = $\left(\frac{1}{9} + \frac{1}{12}\right) = \frac{7}{36}$.

Work done by B and C in 3 days = $\left(\frac{7}{36} \text{ x } 3\right) = \frac{7}{12}$.

Remaining work = $\left(1 - \frac{7}{12}\right) = \frac{5}{12}$.

Now, $\frac{1}{24}$ work is done by A in 1 day.

So, $\frac{5}{12}$ work is done by A in $\left(24 \text{ x } \frac{5}{12}\right)$ = 10 days.

52. Answer: Option A

Explanation:

Let 1 man's 1 day's work = x and 1 boy's 1 day's work = y.

Then, 6x + 8y = $\frac{1}{10}$ and 26x + 48y = $\frac{1}{2}$.

Solving these two equations, we get : x = $\frac{1}{100}$ and y = $\frac{1}{200}$.

(15 men + 20 boy)'s 1 day's work = $\left(\frac{15}{100} + \frac{20}{200}\right) = \frac{1}{4}$.

$\therefore$ 15 men and 20 boys can do the work in 4 days.

53. Let r = 1/t be Bobby's rate. Now, the rate at which they work together is merely the sum of their rates:

Total Rate = Johnny's Rate + Bobby's Rate

1/20 = 1/30 + 1/t

1/20 - 1/30 = 1/t

(30 - 20)/(30)(20) = 1/t

1/60 = 1/t

t = 60

Hence, working alone, Bobby can do the job in 1 hour. The answer is (C).

54. Correct Answer: C 75/7 days

Rate at which the husband works is 1/20,
Rate at which the wife works is 1/15.
These quantities have the units of job/day.
When both work together, the job per day would be (1/15)+(1/20) = 7/60.
Therefore number of days to complete the job would be 60/7.
Number of days they have already worked for = (60/7)- 5 = 25/7.
Let the wife take x more days to finish the work.
So,
[(1/15)+(1/20)]*[25/7] + [(1/15)*x] = 1.
X = 35/4.
Therefore total number of days to complete the job would be (35/4)+ (25/7)

55. Correct Answer: C 120/37 hours

Job/ hour for X would be 1/8
Job/hour for Y would be 1/10
Job/hour for Z would be 1/12
Therefore job/hour when all three are working together would be
(1/8)+(1/10)+(1/12) = (15+12+10)/(120)
= 37/120.
Therefore when they work together, they take 37/120 hours to finish the job

56. Correct Answer: D 10 days

Job/(man.day) = 1/10*30
Job/ (woman.day) = 1/15*30.
Let 12 men and 27 women take x days to finish the job.
Hence,
[(1/300)*12+(1/450)*27]*x = 1.
Solving for x we get 10.

57. Correct Answer: C 50 days

Let one job be knitting one sweater.
Therefore job/(woman.hour) = 6/15*20*6 = 1/300.
Let 20 women take x days working 3 hours a day.
(1/300)*3x*20 = 10 (since 10 sweaters have to be made)
Solving for x, we get 50

58. Correct Answer: C 15

When x men were supposed to complete the job in 20 days..
Job/(man.day)= 1/(20.x)
5 were absent, so x-5 men did the job in 30 days.
Therefore,
(1/20x)*(x-5)*30 = 1.

X = 15.

59. Correct Answer: A 60/7 days
X does 2/3 of the work in 10 days, so to complete the work he requires 10*(3/2) = 15 days.
Similarly Y would require 20 days to do the work.
Job/day for X = 1/15.
Job/day for Y = 1/20.
Therefore, when both work together, job/day = (1/15)+(1/20)= 35/300.
So number of days to finish the job is 60/7.

60. Correct Answer: B 33.33 days
The work hours are reduced in the ratio 3:4.
Say, initially the men were working for 4x hours and later it was reduced to 3x hours.
Job/(man.hour) = 1/(1500*30*4x) = 1/(180000x)
Let the 1800 men working for 3x hours take 'y' days to finish the job.
[1/(180000x)]* 1800*3x*y = 1.
Solving, we get y = 33.33

61. Correct answer E

62. The correct answer D is 6 quarts.
Ans: Let me call x as the number of quarts of Maxim that we have to use. This is always the first step in making an equation: giving a name to the number we have to find.

The resulting mixture of 3 quarts of Minum and x quarts of Maxim will contain 3 * 5% + x * 20% quarts of hydrogen peroxide.
-> the percentage of hydrogen peroxide in the mixture is
(3 * 5% + x * 20%) / (x + 3) = 15%
-> 3 * 5 + 20 * x = 15 * (x + 3)
-> 15 + 20 * x = 15 * x + 45
-> 5 * x = 30
-> x = 30/5 = 6

63. Correct Ans A
: Let the milk quantity by M then
Total CP--3M

Total SP--3(M+5)

As there is a profit of 20% on the total cost price

120 % of 3M= 3(M+5)

120/100(3M)=3(M+5)
360M=300(M+5)
M=1500/60
M=25
Which is 83.33% of 30 litres (25M+5W)
Other method:
m is the quantity of milk
x is the percentage of milk in the mixture
A milkman sells the mixture at the same price ($3/liter) as before and makes a profit of 20%.
we have: 1.2*3*m = 3(m + 5) => m=25 liter

and milkman makes the mixture as: 5*x = m*(100-x) = 25*(100-x) => x= 83.33
other method:
Over all he is making 20% profit.

In other words he is making 20% per litre profit.

So he is making 20% of $3 as profit = $0.60

Consider there was x litres of milk.

So we can form an equation as follows

(x+5) * 3 = x * 3.6

x = 25

So number of litres of milk is 25.
Number of litres of water is 5

Hence % of milk is 25/30 which is 83.33%
Other method:
A different approach:
Milkman is adding 5 liters of water and selling at $3 per liter and so total income because of

this process is = 5*3= $15 and due to this milkman is earning 20% more and so $15 is 20% of what?= its 75 = so $75/$3=25 litres of milk.
So we have = 25 litres of milk and 5 litres of water. Now we know the answer.
Other explanation:
The milkman makes a profit of 20%

that means he adds 1 litre for every 5 litres of milk.

so the percentage of milk in the final solution is 5/6 = 83.33%
Different method:
A different approach can be: (False value - Actual value)/False value

False value = 15 + 0.2 * 3 * 5 = 18, Actual value 15

so (18 - 15) / 18 = 1 / 6= 16.67%, this is the percentage of water, thus %age of milk would be 83.33%.

64. Correct answer: D

Currently it has 0.85x of ethanol and 0.15x of Benzene (total = x liters).

Let us say we add y liters of ethanol to make the mixture 10% benzene. The total mixture is now x+y liters.

Therefore
0.15 x / (x + y) = 0.10; 0.15 x = 0.10 x + 0.10 y;
y= (0.05x)/ 0.10; y = x/2;