Math Test [Part 1]

ANSWER KEY

1. Two numbers are in the ratio 5:8. If the smaller number is 40, what is the larger number?

A. 25   B. 43   C. 64   D. 100

2. There are 28 purple cards in a pack of ZXC cards. If the ratio of purple to green cards is 4:7, how many green cards are there?

A. 16   B. 31   C. 49   D. 50

3. Mr. Suarez gave Ana, Bea, and Carol a total of P2400 in the ratio 3:4:5 respectively. How much did Carol receive?

A. P480   B. P600   C. P800   D. P1000

4. A 120-cm plant casts a shadow 90 cm long. At the same time, how long is the shadow of a 240-cm post?

A. 180 cm   B. 210 cm   C. 320 cm   D. 400 cm

5. Mark weighs 60 kg and sits 120 cm to the left of the fulcrum of the seesaw. To balance the seesaw, how far on the other side must Neil sit if Neil weighs 80 kg?

A. 40 cm   B. 90 cm   C. 140 cm   D. 160 cm

6. A group of 24 men can finish a job in 5 days. How long will it take a group of 20 men to finish the same job?

A. 5 days   B. 5 ½ days   C. 6 days   D. 9 days

7. The ratio of women to men in a factory is 2:3. What percent of the workforce are women?

A. 40%   B. 60%   C. 66.67%   D. 75%

8. The ratio of red to yellow to blue balls in a bag is 4:5:3. If there are 60 red balls, how many balls are there in the bag?

A. 68   B. 90   C. 120   D. 180

9. A pipe can fill a pool in 15 hours, while another pipe can drain the pool in 18 hours. How long will it take to fill the pool if both pipes are left open?

A. 72 hours   B. 90 hours   C. 120 hours   D. 180 hours

10. The ratio of red balls to green is 3:4, while the ratio of green to blue is 5:6. What is the ratio of red balls to blue?

A. 1:2   B. 5:8   C. 8:9   D. 9:25

11. Rain falls at the rate of x liters per y minutes. At this rate, how much rain would fall in z hours?

A. 60xyz   B. xz/60y   C. xy/60z   D. 60xz/y

12. Al can finish emptying a full storage in 6 hours. Ben can do the same job in 4 hours. How long will it take them to finish the job if they were to work together?

A. 2 hours   B. 2.4 hours   C. 2.8 hours   D. 3 hours

13. A team of five men can do a job in 30 days. If one man is added to the team, how long will it take the new team to finish the same job?

A. 29 days   B. 25 days   C. 24 days   D. 20 days

14. There are 3 pigs per 5 chickens in a farm. How many pigs are there if there are 30 chickens in the farm?

A. 50   B. 36   C. 25   D. 18

15. A meter stick is broken at the 40cm mark. What is the ratio of the shorter to the longer piece?

A. 2:3   B. 3:4   C. 4:5   D. cannot be determined

16. A certain mixture requires 200 mL of water per 100 grams of powder. How much powder is needed if the mixture will have 4 liters of water?

A. 200 grams   B. 2 kilograms   C. 5 kilograms   D. 8 kilograms

17. It takes 7 men 24 days to finish a job. How long will it take 6 men to finish the same job?

A. 23 days   B. 25 days   C. 28 days   D. 30 days

18. Daddy Dan gave Elsa, Fe and Gina their allowance in the ratio 4:5:6 respectively. If Daddy Dan gave them a total of P300, how much allowance did Elsa get?

A. P80   B. P75   C. P60   D. P50

19. A certain amount of food can feed 5 villagers for 12 days. How many days can it feed 4 villagers?

A. 15 days   B. 13 days   C. 9.6 days   D. 8 days

20. What is 50% of 90% of 180?

A. 120   B. 100   C. 90   D. 81

21. What percent of 500 is 600?

A. 83.33%   B. 90%   C. 120%   D. 125%

22. 70 is what percent of 80?

A. 114.29%   B. 90%   C. 87.5%   D. 85%

23. 45% of what number is 36?

A. 16.2   B. 80   C. 90   D. 125

24. What number is 60% of 80?

A. 48   B. 75   C. 133.33   D. 150

25. What percent of 50 is 31?

A. 62%   B. 93%   C. 124%   D. 155%

26. The ratio of x to y is 4:5. What percent of x is y?

A. 44.44%   B. 55.55%   C. 80%   D. 125%

27. Evaluate: $(24 - 4)^2 \times 3$

A. -24   B. 0   C. 120   D. 1200

28. $11 - (2^3 \times 1) =$ ___

A. 2   B. 3   C. 5   D. 7

29. $10 - 72 \times 0$

A. -62   B. 0   C. 10   D. 62

30. $3 \times (2^3 \div 2)^2$

A. 6   B. 24   C. 27   D. 48

31. If $x = 4$ and $y = 5$, what is $2x + 3y$?

A. 59   B. 23   C. 17   D. 12

32. If $7x = 15$ and $5y = 14$, what is $14x + 15y$?

A. 43   B. 72   C. 210   D. 420

33. $(2^3)^2 =$ ___

A. 12   B. 36   C. 64   D. 512

34. $\sqrt{12} + \sqrt{75} =$ ___

A. $\sqrt{87}$ B. $7\sqrt{3}$ C. $8\sqrt{6}$ D. 14

35. Simplify $\sqrt{112}$

A. $7\sqrt{2}$ B. $4\sqrt{7}$ C. $2\sqrt{23}$ D. $3\sqrt{13}$

36. Rationalize $\frac{24}{\sqrt{6}}$

A. 2   B. 4   C. $4\sqrt{6}$ D. $6\sqrt{6}$

37. Rationalize $\frac{12}{2\sqrt{3}}$

A. $2\sqrt{3}$ B. $\sqrt{6}$ C. $4\sqrt{3}$ D. $6\sqrt{3}$

38. $887^2 + 2(887)(113) + 113^2 =$ ___

A. 973,960   B. 980,980   C. 990,990   D. 1,000,000

39. $892^2 + 892(108) =$ ___

A. 810,000   B. 819,000   C. 892,000   D. 900,000

40. Which of the following is the greatest? 5^3 3^5 4^4

A. 5^3 B. 3^5 C. 4^4 D. They are all the same.

41. $54^2 + 2(54)(46) + 46^2 =$ ___

A. 9,000   B. 9,640   C. 10,000   D. 14,416

42. $123^2 - 23(123) =$ ___

A. 13,580   B. 12,300   C. 11,850   D. 10,980

43. Find the average of 53, 48, 57, 60, and 47.

A. 51.9   B. 52.8   C. 53   D. 54.25

44. Seven numbers have an average of 56. What is their sum?

A. 412   B. 392   C. 282   D. 80

45. The average of seven numbers is 72. The average of two of these numbers is 62. What is the average of the other 5 numbers?

A. 73.5   B. 74.25   C. 75   D. 76

46. A car travels at a speed of 60 kph for 6 hours and at a speed of 40 kph for 4 hours. What is its average speed?

A. 50 kph   B. 52 kph   C. 52.5 kph   D. 55 kph

47. A bus travels for at a speed of 50 kph for 7 hours and at a speed of 70 kph for 3 hours. What is its average speed?

A. 60 kph   B. 58.5 kph   C. 57 kph   D. 56 kph

48. If A = 3B and 2B = 5C, what is A in terms of C?

A. $A = \frac{15C}{2}$ B. A = 10 C   C. A = 15 C   D. A = 17C

49. If 3x = 20 and 4y = 25, what is 9x + 8y?

A. 100.75   B. 102.5   C. 105   D. 110

50. If 7A = 10 and 3B = 8, what is 14A + 15B?

A. 50   B. 60   C. 70   D. 80

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