

Mathematics – Part 1

1. Two buses leave the same station at 8:00 pm. One bus travels north at the rate of 30 kph and the other travels east at 40 kph. How many kilometers apart are the buses at 10 pm?

- a. 140 km
- b. 100 km
- c. 70 km
- d. 50 km

2. Calculate the mean absolute deviation of the following numbers: 60, 80, 100, 75 and 95

- a. 12.4
- b. 14.2
- c. 16.1
- d. 18.9

3. Which of the following is the factorization of the binomial $x^2 - 42$?

- a. $(x + 4)(x + 2)$
- b. $(x - 4)^2$
- c. $x(x + 2x + 2)$
- d. $(x - 4)(x + 4)$

4. What value of x will satisfy the equation: $0.4(5x - 1470) = x$?

- a. 490
- b. 2,130
- c. 1470

5. Which of the following has the greatest value:

- a. $3 + 32 + (3 + 3)^2$
- b. 33
- c. $[(3 + 3)^2]^2$
- d. $(3 + 3 + 3)^2$

6. The average of 5 different counting numbers is 20. What is the highest possible value that one of the numbers can have?

- a. 20
- b. 40
- c. 30
- d. 90

7. Three brothers inherited a cash amount of P62,000 and they divided it among themselves in the ratio of 5:4:1. How much more is the largest share than the smallest share?

- a. P75,000
- b. P30,000
- c. P24,800

8. What is the missing terms in the series 5, 20, 80, ____, 1280, ____, 20, 480?

- a. 50;210
- b. 40;160
- c. 35;135
- d. 320;5120

9. At what rate per annum should P2400 be invested so that it will earn an interest of P800 in 8 years?

- a. $6\frac{1}{2}\%$
- b. $5\frac{1}{2}\%$
- c. 4.17 %
- d. 6 %

10. The area of a rectangle is $(x^2 + 2x - 8)$. If its length is $x + 4$, what is its width?

- a. $x + 2$
- b. $x - 2$
- c. $x + 1$
- d. $x + 6$

11. What is the value of $12\frac{1}{6} - 3\frac{3}{8} - 5\frac{2}{3} + 20\frac{3}{4}$?

- a. $21\frac{1}{8}$
- b. 22
- c. $23\frac{7}{8}$
- d. 21

12. The vertex angle of an isosceles triangle is 20° . What is the measure of one of the base angles?

- a. 150°
- b. 60°
- c. 75°
- d. 80°

13. Ana and Beth do a job together in three hours. Working alone, Ana does the job in 5 hours. How long will it take Beth to do the job alone?

- a. 3 and $\frac{1}{3}$ hours
- b. 2 and $\frac{1}{3}$ hours
- c. 3 hours
- d. 7 and $\frac{1}{2}$ hours

14. How much greater is the sum of the first 50 counting numbers greater than the sum of the first 100 counting numbers?

- a. 110
- b. 3,775
- c. 3,155
- d. 1200

15. Which of the following has the largest value?

- a. 85
- b. 39

- c. 65
- d. 94

16. A water tank contains 18 liters when it is 20% full. How many liters does it contain when 50% full?

- a. 60
- b. 30
- c. 58
- d. 45

17. The edges of a rectangular solid have these measures: 1.5 feet by $1\frac{1}{2}$ feet by 3 inches. What is its volume in cubic inches?

- a. 324
- b. 225
- c. 972
- d. 27

18. In a certain school, the ratio of boys to girls is 5 is to 7. If there are 180 boys and girls in the school, how many boys are there?

- a. 105
- b. 90
- c. 45
- d. 75

19. Ruben's grades in 6 subjects are 88, 90, 97, 90, 91 and 86? What is the least grade that he should aim for in the 7th subject if he has to have an average of 88?

- a. 92
- b. 74
- c. 88
- d. 85

20. On a certain day, three computer technicians took turns in manning a 24-hour internet shop. The number of hours Cesar, Bert, and Danny were on duty was in the ratio 3:4:5, respectively. The shop owner pays them P50 per hour. How much would Danny receive for that day?

- a. P 230
- b. P500
- c. P160
- d. P480

21. A retailer buys candies for P90.25. The pack has 35 pieces of candies. If she sells each candy for P2.25, how much profit does she make?

- a. P11.50
- b. P56.25
- c. P37.50
- d. P18.75

22. An online shop sells a certain calculator for P950 and charges P150 for shipping within Manila, regardless of the number of calculators ordered. Which of the following equations shows the total cost (y) of an order as a function of the number of calculators ordered (x)?

- a. $y = (950 + 150)x$
- b. $y = 150x + 950$
- c. $x = 950y + 150$
- d. $y = 950x + 150$

23. One side of a $45^\circ - 45^\circ - 90^\circ$ triangle measures x cm. What is the length of its hypotenuse?

- a. $X\sqrt{3}$ cm
- b. X cm
- c. $(X\sqrt{3})/2$ cm
- d. $X\sqrt{2}$ cm

24. The legs of one right triangle are 9 and 12, while those of another right triangle are 12 and 16. How much longer is the perimeter of the larger triangle than the perimeter of the smaller triangle?

- a. 84
- b. 7
- c. 12
- d. 14

25. Determine the midpoint of the line segment joining the points (7, -3) and (-1, 6).

- a. $(2, 3/2)$
- b. $(2, -3/2)$
- c. $(3, 3/2)$
- d. $(1, 5/2)$

26. Which of these has the longest perimeter?

- a. A square 21 cm on a side
- b. A rectangle 19 cm long and 24 cm wide
- c. An equilateral triangle whose side is 28 cm
- d. A right triangle whose two legs are 24 and 32 cm

27. How many square inches are in 2 square yard?

- a. 900
- b. 144
- c. 1296
- d. 2,592

28. In a playground for Kindergarten kids, 18 children are riding tricycles or bicycles. If there are 43 wheels in all, how many tricycles are there?

- a. 8
- b. 9
- c. 7
- d. 11

29. Nelia takes $\frac{3}{4}$ hour to dress and get ready for school. It takes $\frac{4}{5}$ hour to reach the school. If her class starts promptly at 8:00 am; what is the latest time she can jump out of bed in order not to be late for school?

- a. 6:42 am
- b. 6:27 am
- c. 6:57 am
- d. 7:02 am

30. Which common fraction is equivalent to 0.215?

- a. $\frac{43}{200}$
- b. $\frac{27}{125}$
- c. $\frac{21}{50}$
- d. $\frac{108}{375}$

Answers: 1B 2A 3D 4D 5C 6D 7C 8D 9C 10B 11C 12D 13D 14 15A 16D 17C 18D 19B 20B 21 22D 23D 24C 25C 26D 27D 28C 29B 30A