AVERAGES MIX

1. Husain and Deepak had an average (arithmetic mean) of $20 each. Deepak then won a cash prize, which increased the average amount of money they had to $80. If no other changes occurred, how many dollars did Deepak win?
   A. 110
   B. 120
   C. 90
   D. 85
   E. 100

2. If x is an integer, which of the following is the average (arithmetic mean) of x, x – 6, and x + 12?
   A. x
   B. x+2
   C. x+9
   D. 3x+6
   E. 4x+1

3. What is the median of the list 20, x, 7, 11, 3, if x is negative?
   A. 3
   B. 7
   C. 9
   D. 11
   E. 15.5

4. If the average (arithmetic mean) of *f* and 11 is equal to 2*f*, what is the average of *f* and $\frac{13}{3}$?
   A. 4
   B. 8
   C. 11
   D. 14
   E. 19

5. Johannes bought 5 books with an average (arithmetic mean) price of $12. If Johannes then buys another book with a price of $18, what is the average price, in dollars, of all 6 books?
   A. 12.50
   B. 13
   C. 13.50
   D. 14
   E. 15

6. Every week, at Hamster Cafe, Ranee is paid $40 per hour for the first 40 hours she works, and $80 per hour for each hour she works after the first 40 hours. How many hours would Ranee have to work in one week to earn an average (arithmetic mean) of $60 per hour that week?
   A. 60
   B. 65
   C. 70
   D. 75
   E. 80

7. The average (arithmetic mean) of 7 numbers in a list of random numbers is 12. The average of the 4 smallest numbers in this list is 8, while the average of the 4 greatest numbers in this list is 17. How much greater is the sum of the 3 greatest numbers in the list than the sum of the 3 smallest numbers in the list?
   A. 4
   B. 14
   C. 28
   D. 36
   E. 52

8. If the average (arithmetic mean) of m, n, p, 5, and 6 is 6, what is the average of m, n, p, and 13?
   A. 8
   B. 8.5
   C. 9
   D. 9.5
   E. 10

9. In a Psychology class, the average (arithmetic mean) height of the female students is 66 inches, and the average (arithmetic mean) height of the male students is 72 inches. If the average (arithmetic mean) height of all the people in the group is 70 inches, what is the ratio of female to male in the group?
   A. 1 : 1
   B. 1 : 2
   C. 2 : 1
   D. 2 : 3
   E. 3 : 2

10. Jamil noted that, the average (arithmetic mean) of 13 random numbers is 70. If the average of 10 of these numbers is 90, what is the average of the other 3 numbers?
   A. – 130
   B. 10/3
   C. 30
   D. 90
   E. 290

11. Juice A is 55% pure fruit. Juice B is 70% pure fruit. Shelina combines an amount of the two juices in a container and finds that the mixture is 65% pure fruit. If the container contains a total of 12 litres of juice, how much of the juice, in litres, is Juice A, in the container?
   A. 3
   B. 4
   C. 6
   D. 8
   E. 9

12. Three people have $32, $72, and $98, respectively. If they pool their money then redistribute it among themselves, what is the maximum possible value, in dollars, for the median amount of money?
   A. 72
   B. 85
   C. 98
   D. 101
   E. 202

13. Weekly Revenue per Product Category at Office Supply Store X

Product Category Weekly Revenue	
Pens	$164
Pencils	$111
Legal Pads	$199
Erasers	$38
Average of categories above	$128

According to the chart above, the average (arithmetic mean) revenue per week per product category is $128. However, there is an error in the chart; the revenue for Pens is actually $176, not $164. What is the new, correct average revenue per week per product category, in dollars?

A. 130
B. 131
C. 132
D. 164
E. 176

14. Babar spends equal amount in buying two types of oranges at the rate of 5 oranges for a dollar and 10 oranges for 3 dollars. Which of the following shows the average cost of the oranges, in cents?

A. 24
B. 25
C. 26
D. 27
E. 30

15. The average (arithmetic mean) of five numbers is 25. After one of the numbers is removed, the average (arithmetic mean) of the remaining numbers is 31. What number has been removed?

A. 1
B. 6
C. 11
D. 24
E. 15

16. If the average (arithmetic mean)) of 16, 20, and n, is between 18 and 21, inclusive, what is the greatest possible value of n?

A. 18
B. 21
C. 27
D. 54
E. 63

17. If the average (arithmetic mean) of four distinct positive integers is 11, what is the greatest possible value of any one of the integers?

A. 32
B. 35
C. 38
D. 40
E. 41

18. Samuel had an average score of 72 on his first four math tests. After taking the next test, his average dropped to 70. Which of the following is his most recent test grade?
    A. 58
    B. 60
    C. 62
    D. 64
    E. 66

19. The average of two numbers is XY. If the first number is Y, what is the other number?
    A. 2XY – Y
    B. XY – 2Y
    C. 2XY – X
    D. X
    E. XY – Y

20. A number p equal 3/2 the average of 10, 12, and q. What is q in terms of p?
    A. $\frac{2}{3}$ p – 22
    B. $\frac{4}{3}$ p – 22
    C. 2p – 22
    D. ½ p + 11
    E. 2p + 22

21. What is the average of all numbers from 1 to 100 that end in 2?
    A. 45
    B. 46
    C. 47
    D. 48
    E. 50

22. In a family of five, the heights of the members are 5 feet 1 inch, 5 feet 7 inches, 5 feet 2 inches, 5 feet, and 4 feet 7 inches. Which of the following represents the average height of the members?
    A. 4 feet 4 1/5 inches
    B. 5 feet
    C. 5 feet 1 inch
    D. 4 feet 3 2/5 inches
    E. 4 feet 11 inches

23. The average temperature for Monday, Tuesday, Wednesday, Thursday, was 88 degrees. The average temperature for Tuesday, Wednesday, Thursday, and Friday was 90 degrees, that for Friday being 93 degrees. What was the temperature on Monday?
    A. 75
    B. 80
    C. 84
    D. 85
    E. 72

24. The average height of a class of 24 boys is 5’2”. By the admission of one boy, the average decreases by $\frac{1}{5}$”. Find the height of the new boy?
    A. 4’9”
    B. 4’5”
    C. 4’
    D. 4’4”
    E. 4’8”
25. The average age of a class of 40 students is 12 years. If the teacher’s age is also included, the average age increases by one year. What is the age of the teacher, in years?
    A. 41
    B. 42
    C. 52
    D. 53
    E. 54

26. A batsman in his 17th inning makes a score of 85, and thereby increases his average score by 3. His average score after the 17th inning is
    A. 33
    B. 34
    C. 35
    D. 36
    E. 37

27. There are 40 boys in a class. One of them, weighing 100 lbs., goes away. A new boy joins the class at the same time. The average weight of the boys is thus increased by ¼ of a pound. Which of the following represents the weight of the new boy, in pounds?
    A. 102
    B. 110
    C. 112
    D. 98
    E. 115

28. The average weight of 18 students in a class is decreased by 500 grams, when one of the students who weighs 50 kg is replaced by a new boy. What is the weight of the newcomer, in kilograms?
    A. 40
    B. 41
    C. 43
    D. 52
    E. 59

29. The average age of 8 men is increased by 2 years when two of them, whose ages are 20 and 24 years, are replaced by two men. What is the average age of two men, in years?
    A. 14
    B. 22
    C. 25
    D. 18
    E. 30