

1. A ream of paper containing 500 sheets is 5 cm thick. How many sheets of this type of paper would there be in a stack 75 cm high?
 - a. 2500
 - b. 5500
 - c. 6670
 - d. 7500
 - e. 12500

2. A square and a triangle have equal perimeters. The lengths of the three sides of the triangle are 62 m, 83 m, and 95 m. The area of the square is:
 - a. 2400 m^2
 - b. 3600 m^2
 - c. 4800 m^2
 - d. 6400 m^2
 - e. 1440 m^2

3. If you walk for 45 minutes at a rate of 4 mph and then run for 30 minutes at a rate of 10 mph, how many miles have you gone at the end of 75 minutes?
 - a. 3.5 miles
 - b. 8 miles
 - c. 9 miles
 - d. 25 miles
 - e. 480 miles

4. The difference between 5.5% sales tax and a 5% sales tax on an item priced at \$200 before tax is:
 - a. \$0.01
 - b. \$5.00
 - c. \$1.00
 - d. \$10.00
 - e. \$100.00

5. How many whole numbers between 100 and 400 contain the digit 2?
 - a. 100
 - b. 120
 - c. 138
 - d. 140
 - e. 148

6. The value of $6 + \frac{1}{10} + \frac{6}{1000}$ is:
- 6.16
 - 6.016
 - 6.106
 - 6.0016
 - 6.1006
7. The number added to $1/2$ to give $5/8$ is:
- $1/8$
 - $2/3$
 - $3/5$
 - $9/8$
 - None of these
8. You are given one hour to complete a contest. The fraction of the time remaining for you to complete the contest after thirty-five minutes have elapsed is:
- $2\frac{1}{2}$
 - $1/4$
 - $7/20$
 - $7/12$
 - $5/12$
9. It requires nine hours to fill $3/5$ of a swimming pool. At this rate, the number of hours required to fill the remainder of the pool is:
- 0.4
 - 3.6
 - 5.4
 - 6.0
 - 15
10. The approximate number of seconds in one year is:
- 3,000,000
 - 30,000,000
 - 1,500,000
 - 500,000
 - 80,000

11. The area of the country is $1,700,000 \text{ km}^2$. Four hundred million people lie there. Of the answers given, the best approximation of the number of people per square kilometer is:
- a. 0.004
 - b. 20
 - c. 400
 - d. 200
 - e. 2000
12. A garden, $10 \text{ yd} \times 20 \text{ yd}$, is enclosed by a sidewalk of width 1 yd . The area of the sidewalk, in square yards, is:
- a. 231
 - b. 31
 - c. 264
 - d. 64
 - e. None of these
13. $\frac{1}{100}$ of 0.1% is:
- a. 0.1
 - b. 0.001
 - c. 0.0001
 - d. 0.00001
 - e. 0.000001
14. A man borrowed $\$3500$ and a year later paid back the loan plus interest with a check for $\$4200$. The annual rate of interest, in percent, paid for the loan was:
- a. 700
 - b. 83.3
 - c. 20
 - d. 120
 - e. 16.6
15. A merchant reduces the price of a $\$25.00$ item by 35% . The sale price is:
- a. $\$24.65$
 - b. $\$8.75$
 - c. $\$16.25$
 - d. $\$17.25$
 - e. $\$16.00$

16. In a class of 30 students, 40% wear glasses. Three of those wearing glasses are left-handed. Of those wearing glasses, the percent that are left-handed is:
- 10
 - 25
 - 7.5
 - 3
 - 4
17. Mr. John sold two pipes at \$1.20 each. Based on the cost, the profit on one was 20% and the loss on the other was 20%. On the sale of the pipes he:
- broke even
 - lost 4 cents
 - gained 4 cents
 - gained 10 cents
 - lost 10 cents
18. The number of divisors of 105 is:
- 7
 - 8
 - 9
 - 10
 - 11
19. The number $2^{10} - 1$ is divisible by:
- 29
 - 5
 - 7
 - 9
 - 11
20. The three numbers 1, 2, and 3 can be used to form a three-digit number such as 231. The number of these three-digit numbers that are divisible by 6 is:
- 2
 - 1
 - 6
 - 4
 - 0

21. The smallest value of k so that $240k$ is a perfect square is:
- a. 15
 - b. 6
 - c. 9
 - d. 60
 - e. 5
22. A perfect number is a number which equals the sum of its distinct proper divisors. For example, 6 is perfect since $6 = 1 + 2 + 3$. The next perfect number is:
- a. 28
 - b. 16
 - c. 24
 - d. 8
 - e. 36
23. Every 12 minutes a bus leaves from Town A for Town B. Every 20 minutes a bus leaves from Town A for Town C. Buses leave at 1:00 p.m. for both places. Another time when buses will be leaving for both places is:
- a. 1:32 p.m.
 - b. 2:20 p.m.
 - c. 2:40 p.m.
 - d. 3:00 p.m.
 - e. 3:40 p.m.
24. If she works 8 hours a day, Nancy can paint a house in 12 days. If she works only 6 hours a day, the number of days it would take her to paint the same house, working at the same rate is:
- a. 96
 - b. 16
 - c. 9
 - d. 48
 - e. 72
25. Henry has \$24 more than my cousin Joe, who has \$15 more than my friend Ann. Together the three people have \$99. The amount Ann has, in dollars, is:
- a. \$15
 - b. \$20
 - c. \$39
 - d. \$45
 - e. \$60

26. The number of prime numbers less than ten thousand with digits that have a sum of 2 or 3 is:
- a. 4
 - b. 3
 - c. 6
 - d. 5
 - e. 2
27. There are 15 Blue Jays and 14 Orioles perched in 3 trees. Each tree has at least 4 Blue Jays, and 2 Orioles. If no tree has more Orioles than Blue Jays, then the largest number of birds that can be in one tree is:
- a. 11
 - b. 12
 - c. 13
 - d. 14
 - e. 15
28. Two sides of a triangle have lengths 14 and 18. Of the following, the one that cannot be that of the third side is:
- a. 2
 - b. 6
 - c. 7
 - d. 28
 - e. 30
29. A sequence is 1, 2, 5, 10, 17, A possible seventh number in this sequence is:
- a. 24
 - b. 26
 - c. 37
 - d. 50
 - e. None of these
30. A rectangular $4 \times 3 \times 2$ block has its surface painted red, and then is cut into cubes with each edge 1 unit. The number of cubes having exactly one of its faces painted red is:
- a. 0
 - b. 8
 - c. 4
 - d. 12
 - e. 24

31. The areas of three of the faces of the rectangular box are 10 cm^2 , 12 cm^2 , and 30 cm^2 . The volume of the box, in cm^3 , is:
- a. 60
 - b. 52
 - c. 3600
 - d. 300
 - e. 120
32. The greatest possible product of two positive integers which have a sum of 7 is:
- a. 6
 - b. 7
 - c. 10
 - d. 12
 - e. 14
33. If Janet travels 48 km in 45 minutes, her speed, in kilometers per hour, is:
- a. 60
 - b. 36
 - c. 64
 - d. 70
 - e. 63
34. The three digit number $2A4$ is added to 329 and gives $5B3$. If $5B3$ is divisible by 3, then the largest possible value of A is:
- a. 1
 - b. 4
 - c. 7
 - d. 8
 - e. 9
35. The number of positive integers that are less than 500 and that are not divisible by 2 or 3 is:
- a. 168
 - b. 167
 - c. 166
 - d. 165
 - e. 83

36. The lengths of the sides of a triangle are $b + 1$, $7 - b$, and $4b - 2$. The number of values of b for which the triangle is an isosceles is:
- a. 0
 - b. 1
 - c. 2
 - d. 3
 - e. None of these
37. Nine copies of a certain pamphlet cost less than \$10.00 while ten copies of the same pamphlet (at the same price) cost more than \$11.00. How much does one copy of this pamphlet cost?
- a. \$1.07
 - b. \$1.08
 - c. \$1.09
 - d. \$1.10
 - e. \$1.11
38. A school has 1200 students. Each student takes 5 classes a day. Each teacher teaches 4 classes. Each class has 30 students and 1 teacher. How many teachers are there at this school?
- a. 30
 - b. 32
 - c. 40
 - d. 45
 - e. 50
39. How many positive integers can be represented as a product of two distinct members of the set $\{1, 2, 3, 4, 5, 6\}$?
- a. 9
 - b. 10
 - c. 11
 - d. 12
 - e. 13
40. How many positive divisors does 720 have?
- a. 4
 - b. 6
 - c. 10
 - d. 20
 - e. 30