



Problems 1-80

Name: _____

School: _____

Grade: _____

Correct: _____

Incorrect: _____

SCORE: (5 x Correct - 4 x Incorrect =) _____

Scorer's Initials: _____

Scorer's Initials: _____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO

This is a 10-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. **ALL PROBLEMS ARE TO BE SOLVED MENTALLY.** Make no calculations with paper and pen/pencil.

Write only the answer in the space provided for each problem. Answers must be complete, legible, and simplified to lowest terms. You are not allowed to use calculators, slide rules, books, or any other aids during this round.

Every tenth problem, marked with an asterisk (*), is an estimation problem which requires approximate integer answers. Any answer to an estimation problem that is within five percent of the correct answer will be scored correct.

Scoring: Five points will be awarded for every correct answer. For every incorrect answer or skipped problem, four points will be deducted. No deduction is taken after the last problem attempted. **Erasures, mark-overs, mark-outs, and extraneous marks on the paper ARE counted as INCORRECT.**

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1. $799 \times 6 =$ _____.
2. $435 + 123 =$ _____.
3. $68 \times 11 =$ _____.
4. $17 + 18 + 19 + 20 + 21 =$ _____.
5. $26 + 9 \times 4 =$ _____.
6. $34 \times 20 =$ _____.
7. $\frac{3}{4} - \frac{3}{8} =$ _____.
8. CCXLI = _____ (Arabic numerals).
9. $19^2 =$ _____.
- (*) 10. $293 + 394 + 405 - 25 =$ _____.
11. $13 \times 25 =$ _____.
12. $29.4 + 31.6 =$ _____.
13. The average of 16, 22, and 28 is _____.
14. $200 - 12 - 24 - 24 =$ _____.
15. $\frac{5}{6} \times \frac{18}{25} =$ _____.
16. $731 - 137 =$ _____.
17. $4 \times 19 \times 2 =$ _____.
18. $3296 \div 16 =$ _____.
19. $2.3 \times .8 =$ _____.
- (*) 20. $51 \times 61 =$ _____.
21. 20% of 85 is _____.
22. $1\frac{1}{2}$ feet = _____ inches.
23. $36 \times 15 =$ _____.
24. The GCD of 24 and 30 is _____.
25. $12\frac{1}{2}\%$ = _____ (fraction).
26. $29 \times 31 =$ _____.
27. If $n = 4$, then $5n - 3n =$ _____.
28. $65 \times 65 =$ _____.
29. The smallest prime number greater than 32 is _____.
- (*) 30. $25641 \div 161 =$ _____.
31. 100 minutes = _____ hours (mixed number).
32. How many positive integral divisors does 30 have? _____.
33. $7\frac{1}{4} \times 7\frac{3}{4} =$ _____ (mixed number).
34. The perimeter of a square is 52 inches. Find its side. _____ inches.
35. $63 \times 67 =$ _____.
36. The multiplicative inverse of $\frac{5}{9}$ is _____ (decimal).
37. $3.6 \div .003 =$ _____.
38. $12 \times 731 =$ _____.
39. The median of 16, 21, 18, 14, and 29 is _____.
- (*) 40. $\sqrt{15000} =$ _____.
41. 4 is to 6 as 18 is to _____.
42. $34 \times 75 =$ _____.
43. $1 + 2 + 3 + 4 + 5 + 6 + 7 =$ _____.

44. The area of a circle whose radius is 9 is $b\pi$ and
 $b =$ _____.
45. $17 \times 99 =$ _____.
46. If nine pencils cost \$2.52, then one dozen
 pencils cost \$ _____.
47. Solve for x : $4x + 7 = 2x - 19$ _____.
48. $2\frac{1}{2} \times 84 =$ _____.
49. How many sides does a hexagon have? _____.
- (*) 50. $5\frac{1}{2} \times 15\frac{1}{2} \times 3\frac{1}{2} =$ _____.
51. $\sqrt{1296} =$ _____.
52. $43_5 =$ _____₁₀.
53. $5\frac{1}{3} \times 4\frac{1}{3} =$ _____ (mixed number).
54. $(17 + 3 \times 9) \div 4$ has a remainder of _____.
55. The legs of a right triangle are 9 and 12.
 Its hypotenuse is _____.
56. $17 \times \frac{17}{18} =$ _____ (mixed number).
57. $12^2 + 36^2 =$ _____.
58. $374 \div 9 =$ _____ (mixed number).
59. Find the area of a trapezoid whose bases are 12
 and 14 and whose height is 6. _____.
- (*) 60. $1428 \times 22 =$ _____.
61. Find the surface area of a cube whose sides
 measure 4. _____.
62. If $(16)(34) = 17x$, then $x =$ _____.
63. $96 \times 93 =$ _____.
64. What percent of 80 is
 3? _____ % (mixed number).
65. $46^2 - 44^2 =$ _____.
66. Find the slope of the line that passes through the
 points $(2, -3)$ and $(3, 4)$. _____.
67. $74 \times 101 =$ _____.
68. $|3^2 - (4)(7)| =$ _____.
69. $4\frac{3}{4} \times 5\frac{1}{4} =$ _____ (mixed number).
- (*) 70. $700000 \div 35 \div 46 =$ _____.
71. $6! =$ _____.
72. $613 \times 111 =$ _____.
73. If $f(x) = x^2 - 3$, then $f(-4) =$ _____.
74. The last digit of 2^{43} is _____.
75. $98 \times 104 =$ _____.
76. $5^4 =$ _____.
77. The product of the GCD and LCM of 43 and 56
 is _____.
78. Find the area of a triangle whose vertices are
 $(1, 5)$, $(1, -1)$, and $(5, -1)$. _____.
79. The largest root of $x^2 - 7x + 12 = 0$ is _____.
- (*) 80. $15\pi^3 =$ _____.

Answers

Every tenth problem is an estimate and should be scored correct if the contestant's answer is within the range given in the answer. The limits of the range are also scored as correct. All other problems require exact answers. The contestant is awarded **5 points** for a correct answer and deducted **4 points** for each incorrect answer. Skipped problems are scored as incorrect up to the last problem attempted on the page.

(1) 4794	(24) 6	(44) 81	(63) 8928
(2) 558	(25) $1/8$	(45) 1683	(64) $3\ 3/4$
(3) 748	(26) 899	(46) 3.36	(65) 180
(4) 95	(27) 8	(47) -13	(66) 7
(5) 62	(28) 4225	(48) 210	(67) 7474
(6) 680	(29) 37	(49) 6	(68) 19
(7) $3/8$	* (30) 151 - 167	* (50) 283 - 313	(69) $24\ 15/16$
(8) 241	(31) $1\ 2/3$	(51) 36	* (70) 413 - 456
(9) 361	(32) 8	(52) 23	(71) 720
*(10) 1013 - 1120	(33) $56\ 3/16$	(53) $23\ 1/9$	(72) 68043
(11) 325	(34) 13	(54) 0	(73) 13
(12) 61	(35) 4221	(55) 15	(74) 8
(13) 22	(36) 1.8	(56) $16\ 1/18$	(75) 10192
(14) 140	(37) 1200	(57) 1440	(76) 625
(15) $3/5$	(38) 8772	(58) $41\ 5/9$	(77) 2408
(16) 594	(39) 18	(59) 78	(78) 12
(17) 152	* (40) 116 - 128	* (60) 29845 - 32986	(79) 4
(18) 206	(41) 27	(61) 96	* (80) 441 - 488
(19) 1.84	(42) 2550	(62) 32	
*(20) 2955 - 3266	(43) 28		
(21) 17			
(22) 18			
(23) 540			

