CONTESTANT ID #: _____

GRADE LEVEL :_____

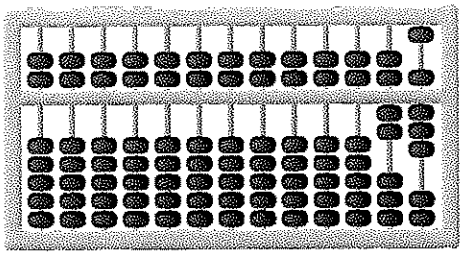
Place Contestant ID label here AFTER grading

PSIA
Private Schools Interscholastic Association

Number Sense

District Contest

Grades 6-8



2023

Grader #1 Score: _____

Grader #2 Score: _____

Grader #3 Score: _____

FINAL SCORE: _____

(Please do not open test until the signal is given to begin.)

1. $243 + 512 =$ _____
2. $\frac{3}{4} \times 12 =$ _____
3. $800 - 45 - 145 =$ _____
4. $70 \times 80 =$ _____
5. LXXIV = _____ (Arabic numerals)
6. $35 \times 11 =$ _____
7. $32 + 36 + 40 + 44 + 48 =$ _____
8. $16 \times 3 \div 2 =$ _____
9. $18.93 + 6.77 =$ _____ (decimal)

* 10. $12014 - 3499 + 1764 =$ _____

11. $25 \times 28 =$ _____
12. Which is larger: $\frac{5}{9}$ or $\frac{4}{7}$? _____
13. $2023 + 3203 =$ _____
14. $\frac{5}{6} \times \frac{3}{20} =$ _____
15. The average of 22, 27, 32, and 35 is _____
16. $16^2 =$ _____
17. $17 - 3 \times 5 =$ _____
18. $72 \times 78 =$ _____
19. $21456 \div 3 =$ _____

* 20. $498 \times 602 =$ _____

21. 30% of 600 is _____
22. $\sqrt{121} =$ _____
23. The LCM of 24 and 30 is _____
24. $1\frac{1}{2}$ gallons = _____ quarts
25. $47 + 36 - 90 =$ _____
26. If 8 eggs cost \$3.72, then 2 dozen eggs cost \$ _____
27. $53 \times 47 =$ _____
28. 1.784 hectometers = _____ millimeters
29. If $x = 6$ and $y = 4$, then $x^2 - 2xy + y^2 =$ _____

* 30. $884931 \div 296 =$ _____

31. The largest prime number less than 40 is _____
32. $4\frac{2}{3} + 3\frac{5}{6} =$ _____ (mixed number)
33. What is the area of a rectangle whose length is 12 cm and width is 8 cm? _____ cm^2
34. $\frac{13 \times 2 - 1}{5^2} =$ _____
35. $21 \times 37 =$ _____
36. If $8x - 15 = 5x + 15$, then $x =$ _____
37. What percent of 50 is 43? _____ %
38. What number is its own additive inverse? _____
39. $12 \times 45 =$ _____

* 40. $\sqrt{267840} =$ _____

41. $78432 \div 9$ has a remainder of _____
42. 75% of _____ is 36
43. Evie drove 84 miles in $1\frac{2}{5}$ hours. How far can she travel in $2\frac{2}{3}$ hours at the same speed? _____ miles

44. $54^2 =$ _____

45. A right triangle has legs of 5 and 12 and a hypotenuse of _____

46. How many proper subsets does {P, S, I, A, 2, 3} have? _____

47. $\frac{1}{8} + \frac{1}{14} =$ _____

48. $45_{10} =$ _____ 9

49. The 13th term in the sequence 1, 4, 7, 10, ..., is _____

* 50. $178 \times 718 \div 8.17 =$ _____

51. $11 \times \frac{13}{14} =$ _____ (mixed number)

52. The product of the first four positive even integers is _____

53. $25^2 + 75^2 =$ _____

54. The volume of a right circular cone with radius 6 cm and height 5 cm is $k\pi$ cm^3 and $k =$ _____

55. CI × XXXII = _____ (Arabic numerals)

56. $\frac{3}{7} + \frac{7}{10} =$ _____ (mixed number)

57. A pound of sugar costs \$1.25. How much will $3\frac{1}{5}$ pounds of sugar cost? \$ _____

58. $84 \times 51 =$ _____

59. The angles of a triangle are 42°, 87°, and _____°

* 60. $37\frac{1}{2} \times 156\frac{1}{4} =$ _____

61. $6237 \div 99 =$ _____

62. $\frac{8!}{6!} =$ _____

63. $1^3 + 2^3 + 3^3 + 4^3 + 5^3 =$ _____

64. $\frac{7}{11} - \frac{29}{43} =$ _____

65. Each central angle of a regular decagon measures _____°

66. $0.151515\ldots =$ _____ (fraction)

67. How many positive integers less than 30 are relatively prime to 30? _____

68. If $\frac{8x-2}{x^2-2x-8} = \frac{A}{x-4} + \frac{B}{x+2}$, then $A =$ _____

69. If $\frac{Q}{7} = 96$, then $\frac{Q^2}{49} =$ _____

* 70. $515\pi^5 =$ _____

71. The slope of the line whose equation is $y = \frac{x-3}{5}$ is _____

72. $13^3 =$ _____

73. If set A has 18 elements, set B has 26 elements, and $A \cup B$ has 40 elements, how many elements are in $A \cap B$? _____

74. The remainder of $(34_7 \times 23_7 + 15_7) \div 6$ has a remainder of _____

75. The odds of winning are 1 : 5. What is the probability of winning? _____

76. $\frac{2^5 \times 5^4}{10^3} =$ _____

77. $\frac{13}{80} =$ _____ (decimal)

78. 10% less than 500 is _____

79. $7\frac{3}{4}$ square feet = _____ square inches

* 80. $1980 \div 16\frac{2}{3} =$ _____

For each estimation problem, the exact value (rounded to two decimal places) appears in square brackets.

(1) 755

(2) 9

(3) 610

(4) 5600

(5) 74

(6) 385

(7) 200

(8) 24

(9) 25.7

***(10)** 9766 – 10792 [10279]

(11) 700

(12) $\frac{4}{7}$

(13) 5226

(14) $\frac{1}{8}$; .125

(15) 29

(16) 256

(17) 2

(18) 5616

(19) 7152

***(20)** 284807 – 314785 [299796]

(21) 180

(22) 11

(23) 120

(24) 6

(25) –7

(26) 11.16

(27) 2491

(28) 178400

(29) 4

***(30)** 2841 – 3139 [2989.63]

(31) 37

(32) $8\frac{1}{2}$

(33) 96

(34) 1

(35) 777

(36) 10

(37) 86

(38) 0

(39) 540

***(40)** 492 – 543 [517.53]

(41) 6

(42) 48

(43) 160

(44) 2916

(45) 13

(46) 63

(47) $\frac{11}{56}$

(48) 50

(49) 37

***(50)** 14861 – 16425 [15643.08]

(51) $10\frac{3}{14}$

(52) 384

(53) 6250

(54) 60

(55) 3232

(56) $1\frac{9}{70}$

(57) 4.00

(58) 4284

(59) 51

***(60)** 5567 – 6152 [5859.38]

(61) 63

(62) 56

(63) 225

(64) $-\frac{18}{473}$

(65) 36

(66) $\frac{5}{33}$

(67) 8

(68) 5

(69) 9216

***(70)** 149721 – 165480 [157600.14]

(71) $\frac{1}{5}$; .2

(72) 2197

(73) 4

(74) 5

(75) $\frac{1}{6}$

(76) 20

(77) .1625

(78) 450

(79) 1116

***(80)** 113 – 124 [118.8]