University Interscholastic League
2019 – 2020 Elementary Number Sense Test B

Contestant's Number _____

Final	_____	_____
2nd	_____	_____
1st	_____	_____
	Score	**Initials**

Read Directions Carefully Before Beginning Test

Do Not Unfold This Sheet Until Told to Begin

Directions: Do not turn this page until the person conducting this test gives the signal to begin. This is a ten-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 pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a (*) require approximate integral answers; any answer to a starred problem that is within five percent of the exact answer will be scored correct; all other problems require exact answers.

The person conducting this contest should explain these directions to the contestants.

Stop – Wait for Signal!

(1) $22 + 21 =$ _____

(2) $69 - 48 =$ _____

(3) $2020 \div 10 =$ _____

(4) $212 \times 3 =$ _____

(5) $307 - 79 =$ _____

(6) $132 \div 6 =$ _____

(7) $21 + 22 + 23 =$ _____

(8) $28 \times 2 \times 5 =$ _____

(9) Which digit is in the thousands place in 12360.97485 ? _____

*(10) $2020 \times 25 =$ _____

(11) $18 \times 16 =$ _____

(12) $19 \times 11 - 11 \times 5 =$ _____

(13) 18764.06956 rounded to the hundreds place is _____

(14) LXXIV =_____ (Arabic numeral)

(15) There are _____ odd numbers between 3 and 28.

(16) $16\times10^2 + 4\times10^1 + 5\times10^{-2} =$_____ (decimal)

(17) $83 \times 101 =$ _____

(18) $4492 \div 9$ has a remainder of _____

(19) $73 \times 25 =$ _____

*(20) $2019 + 2020 + 2021 =$ _____

(21) $12.12 \times 50 =$ _____

(22) $\frac{9}{24} + \frac{11}{24} =$_____ (common fraction)

(23) $1\frac{1}{2}$ yards =_____inches

(24) $24 \div 8 \times 4 =$ _____

(25) $\frac{7}{50} =$_____decimal

(26) Which is smaller: $\frac{11}{15}$ or $\frac{7}{9}$?_____

(27) 65 percent =_____(common fraction)

(28) $175 \times 4 =$ _____

(29) The smallest prime greater than 90 is_____

*(30) $167 \times 1209 + 499 =$ _____

(31) $4\frac{2}{3}\% =$ _____ (common fraction)

(32) The number of unique prime factors of 100 is _____

(33) $\frac{17}{24} - \frac{5}{24} =$_____(common fraction)

(34) $\frac{3}{10} - \frac{15}{100} =$_____(common fraction)

(35) Twelve is to seven as twenty-four is to n. n = _____

(36) If 8 ♠ cost 72¢, then 24 ♠ cost_____¢

(37) The least common multiple of 40 and 24 is _____

(38) $(15 \times 20 \times 30) \div 7$ has a remainder of _____

(39) $225 \times 40 =$ _____

*(40) $29880 \div 6\frac{1}{4} =$ _____

(41) If $z = 6.5$, then $16 + 4z =$ _____

(42) $\frac{3}{4} - \frac{5}{8} =$ _____ (common fraction)

(43) A number, x, added to 9 equals 33. What is x?

_____

(44) The area of a rectangle is 350 and the length of one side is 25. The length of the other side is _____

(45) 72 inches = _____ yards

(46) $23^2 =$ _____

(47) $8\frac{3}{8} + 4\frac{3}{4} =$ _____ (mixed number)

(48) 123 (Base 8) = _____ Base 10

(49) What is the number, ***k***, in the sequence:
0, 3, 8, ***k***, 24, 35, . . .? _____

*(50) $24^4 \div 9^2 =$ _____

(51) $16 \times 1\frac{1}{4} - \frac{1}{2} =$ _____

(52) $92 \times 93 =$ _____

(53) $\frac{5}{9} + \frac{9}{5} =$ _____ (mixed number)

(54) If set A = {N, C, A, A} and set B = {U, I, L}, then the number of elements in $A \cup B$ is _____

(55) If 48 is subtracted from three times a number, the result is 24. The number is _____

(56) $105 \times 12 \div 5 =$ _____

(57) If $3x + 17 = 98$, then $x =$ _____

(58) What is the volume of a rectangular box with sides 24 cm, 24 cm and 10 cm? _____ cm^3

(59) A circle has an area of 36π. What is the circle's diameter? _____

*(60) $\sqrt{366025} =$ _____

(61) $(12) - (-30) \div (-2) =$ _____

(62) $9^2 - 21^2 =$ _____

(63) $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} =$ _____

(64) The area of an isosceles triangle with sides 5, 5, and 8 is _____

(65) $19^2 + 57^2 =$ _____

(66) If a pair of dice is thrown, the probability that the sum of the dice is an even number is _____

(67) If the largest angle of an isosceles triangle is 102°, what is the measure of one of the other angles? ____°

(68) $\sqrt{289} - \sqrt{196} =$ _____

(69) 49 (Base 10) = _____ (Base 4)

*(70) $245^2 =$ _____

(71) $24 \times \left(\frac{5}{8} - \frac{1}{4}\right) =$ _____

(72) The perimeter of a regular pentagon is $3\frac{3}{5}$. What is the length of one side? _____

(73) \$4.25 = _____ quarters

(74) If $24 + 3x > 21$, then $x >$ _____

(75) $12 \times 240 =$ _____

(76) If a black bag contains 8 blue, 12 red, and 16 green marbles, what is the probability of randomly drawing a green marble? _____

(77) $22\frac{2}{9}$ % of 18 is _____

(78) If the angles of a quadrilateral are 45°, 103°, and 62°, what is the measure of the fourth angle? _____°

(79) $420 \times 15 =$ _____

*(80) $101 \times 201 \times 89 =$ _____

2019 – 2020 University Interscholastic League Elementary Number Sense Test B – Key

(1) 43

(2) 21

(3) 202

(4) 636

(5) 228

(6) 22

(7) 66

(8) 280

(9) 2

*(10) 47975 – 53025

(11) 288

(12) 154

(13) 18800

(14) 74

(15) 12

(16) 1640.05

(17) 8383

(18) 1

(19) 1825

*(20) 5757 – 6363

(21) 606

(22) $\frac{5}{6}$

(23) 54

(24) 12

(25) .14

(26) $\frac{11}{15}$

(27) $\frac{13}{20}$

(28) 700

(29) 97

*(30) 192282 – 212522

(31) $\frac{7}{150}$

(32) 2

(33) $\frac{1}{2}$

(34) $\frac{3}{20}$

(35) 14

(36) 216

(37) 120

(38) 5

(39) 9000

*(40) 4542 – 5019

(41) 42

(42) $\frac{1}{8}$

(43) 24

(44) 14

(45) 2

(46) 529

(47) $13\frac{1}{8}$

(48) 83

(49) 15

*(50) 3892 – 4300

(51) $19\frac{1}{2}$; 19.5; $\frac{39}{2}$

(52) 8556

(53) $2\frac{16}{45}$

(54) 6

(55) 24

(56) 252

(57) 27

(58) 5760

(59) 12

*(60) 575 – 635

(61) -3

(62) -360

(63) $\frac{7}{8}$; .875

(64) 12

(65) 3610

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

(67) 39

(68) 3

(69) 301

*(70) 57024 – 63026

(71) 9

(72) $\frac{18}{25}$; .72

(73) 17

(74) -1

(75) 2880

(76) $\frac{4}{9}$

(77) 4

(78) 150

(79) 6300

*(80) 1716450 – 1897128

Note: *(Number) x – y means an integer between x and y inclusive.
If an answer is of the type like 2/3 it cannot be written as .666… or $.\overline{6}$.