University Interscholastic League
2021 – 2022 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) $221 + 19 =$ _____

(2) $12 \times 9 =$ _____

(3) $2200 \div 5 =$ _____

(4) $2021 - 1951 =$ _____

(5) $8 \times 10 \times 7 =$ _____

(6) $337 \times 6 =$ _____

(7) $165 \div 11 =$ _____

(8) $49 - 8 - 22 =$ _____

(9) $32 \times 25 =$ _____

*(10) $301 \times 2022 =$ _____

(11) 414599.6206 rounded to the tens place is

_____

(12) $37 \times 43 =$ _____

(13) Which digit is in the thousands place in 21340.65789? _____

(14) $12 \times 17 =$ _____

(15) What is the remainder for $4518 \div 9$? _____

(16) There are _____ whole numbers between 30 and 7.

(17) $3\times10^3 + 2\times10^2 + 1\times10^{-1} =$ _____ (decimal)

(18) $11 \times 7 - 11 \times 5 =$ _____

(19) MMXXII = _____ (Arabic Numeral)

*(20) $4680 \times 29 + 4679 =$ _____

(21) $18 + 23 + 28 + 33 =$ _____

(22) $24 \div 4 \times 8 =$ _____

(23) $4\frac{1}{2}$ days = _____ hours

(24) $3\frac{3}{8}\% =$ _____ decimal

(25) $\frac{5}{16} + \frac{3}{16} =$ _____

(26) $99 \times 95 =$ _____

(27) $0.82 =$ _____ common fraction

(28) If 60 ♣ costs 80¢ then 45 ♣ cost _____ ¢

(29) $11 \times 85 =$ _____

*(30) $329 \times 667 =$ _____

(31) 56 quarters = _____ nickels

(32) The sum of the two largest primes less than 30 is

_____

(33) \$7.31 minus 5 quarters = \$ _____

(34) $\frac{21}{100} \div \frac{27}{100} =$ _____

(35) 108 inches = _____ yards

(36) The LCM of 18 and 12 is _____

(37) $101 \times 89 =$ _____

(38) $12\frac{1}{2}\% =$ _____common fraction

(39) The ratio of ounces in 1 cup to 1 quart is _____

*(40) $77\frac{7}{9}\% \times 1798 =$ _____

(41) $24^2 =$ _____

(42) $6^3 =$ _____

(43) The volume of a cube with side 3-cm is_____cm^3

(44) The perimeter of a rectangle with sides 23-m and 37-m is _____m

(45) If $49 + x = 211$, then $x =$ _____

(46) $\frac{7}{12} \div \frac{14}{15} =$ _____

(47) $12\frac{4}{5} \times 12\frac{1}{5} =$ _____ (mixed number)

(48) $69 \times 49 =$ _____

(49) If $x = 22$, then $3x - 22 =$ _____

*(50) $39 \times 40 \times 41 =$ _____

(51) What is the number, ***k***, in the sequence: 2, 5, 10, 17, ***k***, 37, 50, . . .? _____

(52) If the area of a circle is 256π, what is the diameter of the circle? _____

(53) What is the area of a right triangle with hypotenuse 13 in. and leg 5 in.? _____ in^2

(54) $24 \times 125 =$ _____

(55) What whole number squared plus sixteen equals forty-one? _____

(56) A triangle has sides of 8-in, 12-in and 12-in. What is its semi-perimeter? _____in

(57) How many elements are in the intersection of the sets {1, 2, 3, . . ., 12} and {1, 3, 5, . . . , 21}? _____

(58) How many elements are in the power set of {T, E, N}?_____

(59) What is the perimeter of a regular hexagon with a side length of $6\frac{5}{6}$?_____

*(60) 2021 years = _____ months

(61) 21 (base 10) = _____ (base 3)

(62) $-4^3 \div 8 =$ _____

(63) 11 square feet =_____sq.in.

(64) $81^2 =$ _____

(65) Two fair dice are thrown. What is the probability that the sum of the two sides showing is 11? _____

(66) 9 quarters plus 8 nickels plus 19 dimes plus 24 cents = $ _____

(67) The volume of a rectangular box that measures 11-m by 5-m by 12-m is_____m^3

(68) If $x + 24 > 8$, then $x >$ _____

(69) $\frac{5}{8} + \frac{8}{5} =$ _____ (mixed number)

*(70) $271 \times 1111 + 9 =$ _____

(71) 450 seconds = _____minutes

(72) For a rectangle with sides 6-cm and 10-cm, what is the ratio of its perimeter to its area?_____

(73) If 6% of x is 18% of 6, then $x =$ _____

(74) $(-12) + (-36) \div (-3) =$ _____

(75) $33^2 + 11^2 =$ _____

(76) $34^2 - 22^2 =$ _____

(77) What is the distance between -8 and 18 on the number line?_____

(78) $49 \times 143 =$ _____

(79) The area of a square with diagonal 12 is _____

*(80) $\sqrt{378225} =$ _____

2021 – 2022 University Interscholastic League Elementary Number Sense Test B – Key

(1) 240

(2) 108

(3) 440

(4) 70

(5) 560

(6) 2022

(7) 15

(8) 19

(9) 800

*(10) 578191 – 639053

(11) 414600

(12) 1591

(13) 1

(14) 204

(15) 0

(16) 22

(17) 3200.1

(18) 22

(19) 2022

*(20) 133380 – 147418

(21) 102

(22) 48

(23) 108

(24) .03375

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

(26) 9405

(27) $\frac{41}{50}$

(28) 60

(29) 935

*(30) 208471 – 230415

(31) 280

(32) 52

(33) 6.06

(34) $\frac{7}{9}$

(35) 3

(36) 36

(37) 8989

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

(39) $\frac{1}{4}$; .25

*(40) 1329 – 1468

(41) 576

(42) 216

(43) 27

(44) 120

(45) 162

(46) $\frac{5}{8}$; .625

(47) $156\frac{4}{25}$

(48) 3381

(49) 44

*(50) 60762 – 67158

(51) 26

(52) 32

(53) 30

(54) 3000

(55) 5

(56) 16

(57) 6

(58) 8

(59) 41

*(60) 23040 – 25464

(61) 210

(62) -8

(63) 1584

(64) 6561

(65) $\frac{1}{18}$

(66) 4.79

(67) 660

(68) -16

(69) $2\frac{9}{40}$

*(70) 286036 – 316144

(71) 7.5; $7\frac{1}{2}$; $\frac{15}{2}$

(72) $\frac{8}{15}$

(73) 18

(74) 0

(75) 1210

(76) 672

(77) 26

(78) 7007

(79) 72

*(80) 585 – 645

Note: *(Number) x – y means an integer between x and y inclusive.

If an answer is of the type like $\frac{2}{3}$ it cannot be written as .666… or $.\overline{6}$.