University Interscholastic League
2021 – 2022 Elementary Number Sense Test A

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) $22 - 19 =$ _____

(2) $7 \times 12 =$ _____

(3) $220 \div 4 =$ _____

(4) $2021 + 2022 =$ _____

(5) $12 \times 5 \times 10 =$ _____

(6) $132 \times 5 =$ _____

(7) $143 \div 11 =$ _____

(8) $73 - 28 - 25 =$ _____

(9) $24 \times 25 =$ _____

*(10) $201 \times 2021 =$ _____

(11) 414599.6206 rounded to the thousands place is _____

(12) $22 \times 18 =$ _____

(13) Which digit is in the hundred-thousandths place in 21340.65789? _____

(14) $24 \times 12 =$ _____

(15) What is the remainder for $2918 \div 9$? _____

(16) There are _____ whole numbers between 6 and 26.

(17) $2\times10^4 + 6\times10^1 + 8\times10^{-1} =$ _____ (decimal)

(18) $8 \times 15 - 15 \times 2 =$ _____

(19) MMXXI = _____ (Arabic Numeral)

*(20) $2022 \times 21 - 2022 =$ _____

(21) $14 + 16 + 18 + 20 =$ _____

(22) $18 \div 2 \times 3 =$ _____

(23) $4\frac{1}{7}$ weeks = _____ days

(24) $5\frac{3}{4}\% =$ _____ decimal

(25) $\frac{13}{24} + \frac{5}{24} =$ _____

(26) $92 \times 93 =$ _____

(27) 0.96 = _____ common fraction

(28) If 48 ♣ costs 64¢ then 36 ♣ cost _____ ¢

(29) $79 \times 11 =$ _____

*(30) $667 \times 239 =$ _____

(31) 17 quarters = _____ nickels

(32) The sum of the two largest primes less than 10 is _____

(33) \$3.20 minus 3 quarters = \$ _____

(34) $\frac{9}{100} \div \frac{27}{100} =$ _____

(35) 72 inches = _____ feet

(36) The LCM of 12 and 9 is _____

(37) $48 \times 101 =$ _____

(38) $87\frac{1}{2}\% =$ _____common fraction

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

*(40) $44\frac{4}{9}\% \times 6299 =$ _____

(41) $16^2 =$ _____

(42) $4^3 =$ _____

(43) The volume of a cube with side 4-cm is_____cm^3

(44) The perimeter of a rectangle with sides 11-m and 19-m is _____m

(45) If $15 + x = 36$, then $x =$ _____

(46) $\frac{9}{10} \div \frac{3}{5} =$ _____

(47) $6\frac{1}{3} \times 6\frac{2}{3} =$ _____ (mixed number)

(48) $37 \times 33 =$ _____

(49) If $x = 15$, then $3x - 20 =$ _____

*(50) $13 \times 15 \times 17 =$ _____

(51) What is the number, ***k***, in the sequence: 1, 1, 2, 3, ***k***, 8, 13, . . .? _____

(52) If the area of a circle is 144π, what is the diameter of the circle? _____

(53) What is the area of a right triangle with hypotenuse 5 in. and leg 4 in.? _____ in^2

(54) $125 \times 16 =$ _____

(55) What whole number squared minus eight equals twenty-eight? _____

(56) A triangle has sides of 10-in, 12-in and 14-in. What is its semi-perimeter? _____in

(57) How many elements are in the intersection of the sets {1, 2, 3, . . ., 10} and {2, 4, 6, . . . , 20}? _____

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

(59) What is the perimeter of the rhombus with a side length of $16\frac{1}{4}$? _____

*(60) 2991 weeks = _____ days

(61) 27 (base 10) = _____ (base 9)

(62) $-2^4 \div 4 =$ _____

(63) 10 square feet =_____sq.in.

(64) $32^2 =$ _____

(65) Two fair dice are thrown. What is the probability that the sum of the two sides showing is 5? _____

(66) 15 quarters plus 18 nickels plus 9 dimes plus 15 cents = $ _____

(67) The volume of a rectangular box that measures 10-m by 8-m by 12-m is_____m^3

(68) If $x + 12 < 8$, then $x <$ _____

(69) $\frac{7}{9} + \frac{9}{7} =$ _____ (mixed number)

*(70) $1111 \times 809 + 1 =$ _____

(71) 390 seconds = _____minutes

(72) For a rectangle with sides 4-cm and 8-cm, what is the ratio of its perimeter to its area?_____

(73) If 9% of x is 4.5% of 6, then $x =$_____

(74) $(-18) + (-24) \div (-2) =$ _____

(75) $36^2 + 12^2 =$ _____

(76) $28^2 - 18^2 =$ _____

(77) What is the distance between -12 and 12 on the number line?_____

(78) $143 \times 28 =$ _____

(79) The area of a square with diagonal 8 is _____

*(80) $\sqrt{81796} =$ _____

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

(1) 3

(2) 84

(3) 55

(4) 4043

(5) 600

(6) 660

(7) 13

(8) 20

(9) 600

*(10) 385910 – 426532

(11) 415000

(12) 396

(13) 9

(14) 288

(15) 2

(16) 19

(17) 20060.8

(18) 90

(19) 2021

*(20) 38418 – 42462

(21) 68

(22) 27

(23) 29

(24) .0575

(25) $\frac{3}{4}$; .75

(26) 8556

(27) $\frac{24}{25}$

(28) 48

(29) 869

*(30) 151443 – 167383

(31) 85

(32) 12

(33) 2.45

(34) $\frac{1}{3}$

(35) 6

(36) 36

(37) 4848

(38) $\frac{7}{8}$

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

*(40) 2660 – 2939

(41) 256

(42) 64

(43) 64

(44) 60

(45) 21

(46) $\frac{3}{2}$; $1\frac{1}{2}$; 1.5

(47) $42\frac{2}{9}$

(48) 1221

(49) 25

*(50) 3150 – 3480

(51) 5

(52) 24

(53) 6

(54) 2000

(55) 6

(56) 18

(57) 5

(58) 32

(59) 65

*(60) 19891 – 21983

(61) 30

(62) -4

(63) 1440

(64) 1024

(65) $\frac{1}{9}$

(66) 5.70

(67) 960

(68) -4

(69) $2\frac{4}{63}$

*(70) 853860 – 943740

(71) 6.5; $6\frac{1}{2}$; $\frac{13}{2}$

(72) $\frac{3}{4}$; .75

(73) 3

(74) -6

(75) 1440

(76) 460

(77) 24

(78) 4004

(79) 32

*(80) 272 – 300

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 $.\overline{6}$.