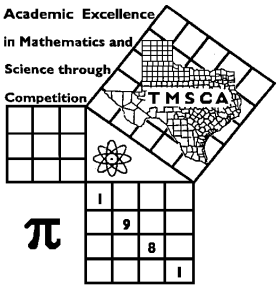
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

PLACE LABEL BELOW

Name:_____ School:_____

SS/ID Number:_____ City:_____

Grade: 4 5 6 7 8 Classification: 1A 2A 3A 4A 5A 6A



TMSCA MIDDLE SCHOOL NUMBER SENSE GEAR-UP TEST©

2018-2019

GENERAL DIRECTIONS

1. Write only the requested information on this coversheet. Do not make any additional marks on this cover sheet.
2. You will be given 10 minutes to take this test.
3. There are 80 problems on the test.
4. Write in ink only! It would be advantageous to use non-black ink.
5. Solve as many problems as you can in the order that they appear.
6. Problems that are skipped are considered wrong.
7. Problems that appear after the last attempted problem do not count either for or against you.
8. ALL PROBLEMS ARE TO BE SOLVED MENTALLY! [No scratch work!]
9. Only the answer may be written in the answer blank.
10. Starred [*] problems require approximate INTEGRAL answers that are within 5% of the exact answers. All other problems require exact answers.
11. All problems answered correctly are worth FIVE points. FOUR points will be deducted for all problems answered incorrectly or skipped before the last problem attempted.

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2018 – 2019 TMSCA Middle School Number Sense Gear-Up Test

(1) $435 \div 5 =$ _____

(2) $12 + 18 + 24 + 30 + 36 =$ _____

(3) $27 \times 13 =$ _____

(4) $0.86 =$ _____ (fraction)

(5) $37 \times 11 =$ _____

(6) $\frac{7}{12} - \frac{1}{3} =$ _____ (fraction)

(7) 2345 ÷ 9 has a remainder of _____

(8) $16^2 =$ _____

(9) $17 \div 3 + 23 \div 3 + 29 \div 3 =$ _____

***(10)** $2018 - 3019 + 4375 =$ _____

(11) Which of the following is greater $\frac{3}{5}$ or $\frac{11}{17}$? _____

(12) $45 \div 7.5 =$ _____

(13) $52 \times 68 =$ _____

(14) What is the median of the smallest seven prime numbers? _____

(15) $5^3 =$ _____

(16) $95 \times 91 =$ _____

(17) $37 \times 84 =$ _____

(18) $72 \times 12.5 =$ _____

(19) $4.75 + 11\frac{1}{2} =$ _____ (mixed number)

***(20)** $808 \times 888 =$ _____

(21) $1.1^3 =$ _____ (decimal)

(22) $75^2 =$ _____

(23) 450 gallons = _____ quarts

(24) $648 \times 111 =$ _____

(25) $14 \times 14\frac{9}{14} =$ _____

(26) $0.55555\ldots =$ _____ (fraction)

(27) $5609 = 71 \times$ _____

(28) The largest prime divisor of 110 is _____

(29) 110 has _____ positive integral divisors

***(30)** $332891 \div 556 =$ _____

(31) The supplement of a 43° angle is _____ °

(32) If a pound of walnuts cost \$9.60, then 2 ounces of walnuts will cost \$ _____

(33) The sum of the positive integral divisors of 40 is _____

(34) The GCD of 44 and 55 is _____

(35) $7\frac{1}{5} \times 6\frac{4}{5} =$ _____ (mixed number)

(36) $19^2 + 57^2 =$ _____

(37) $1 + 3 + 5 + \ldots + 431 = k^2$ and $k > 0$, then $k =$ _____

(38) The hypotenuse of a right triangle with legs of 15 and 20 is _____

(39) If $4x + 3 = 37$, then $x =$ _____ (decimal)

***(40)** $\sqrt{314827} =$ _____

(41) 24% of 93 is 72% of _____

(42) A set with 8 elements has how many more subsets than a set with 7 elements? _____

(43) The area of square with diagonal 18 is _____

(44) The measure of an exterior angle of a regular dodecagon is _____ °

(45) $3\frac{4}{7} + \frac{7}{4}$ = _____(mixed number)

(46) If the sum of the measures of the interior angles of an n-sided polygon is 1440°, then n =_____

(47) If f(*x*) = $\sqrt{14x + 11}$ and f(k) = 9, then k =_____

(48) 32000 = 125 ×_____

(49) 37_{16} =_____$_{10}$

***(50)** 23^3 =_____

(51) If $64^2 - 11^2 = 25(k)$, then k =_____

(52) 23 × $\frac{25}{28}$ =_____ (mixed number)

(53) The sum of the solutions of $|3x - 11| = 5$ is_____

(54) The sum of the integral solutions of $|x - 4| \leq 7.8$ is_____

(55) The area of a hexagon with side 10 is $k\sqrt{3}$. k = _____

(56) If f(2x – 3) = 4x + 1, then f(11) = _____

(57) The slope of the line parallel to 4x + 3y = 7 is____

(58) $46_8 - 17_8$ = _____$_8$

(59) The harmonic mean of 7 and 10 is_____

***(60)** The area of a rectangle with sides $\sqrt{500}$ and $\sqrt{700}$ is_____

(61) If y + 7 = m(x + 11) contains the point (p,q) where p and q are constants, then p + q = _____

(62) If $f(x) = 3x^2 - 5$, then f(14) – f(4) =_____

(63) $2^6 \times 5^5$ =_____

(64) 3100 = 93 × 33 +_____

(65) $32^2 + k^2 = 1313$ and k > 0, then k =_____

(66) The sum of the infinite geometric series, 6 + 1.5 + 0.375 + … = _____

(67) $(15_7)^2$ =_____$_7$

(68) The sum of the 5th pentagonal number and 5th triangular number is_____

(69) 0.31111… = _____ (fraction)

***(70)** Find the surface area of a cube with an edge of 95._____

(71) $\frac{11}{20} + \frac{11}{30} + \frac{11}{42} + \frac{11}{56}$ = _____(improper fraction)

(72) The sum of the coefficients of $(4x^2 + 3x - 2)(x + 11)$ is _____

(73) $f(x) = 3(x - 5)^2 - 4$. f(x) has_____ real roots

(74) 609^2 =_____

(75) How many distinct 5-letter arrangements can be made from {f,l,u,f,f}?_____

(76) If $f(x) = 9x^2 + 30x + 25$, then f(10) = _____

(77) The sum of the product of the roots taken two at a time of $3x^3 - 5x^2 + 12x - 9 = 0$ is_____

(78) Find the probability of rolling a sum of 5 when rolling two 6-sided die. _____

(79) $f(x) = x^3 - 8x^2 + cx + d$ has factors (x – 2), (x – 1) and (x – k). d =_____

***(80)** 80 miles = _____feet

2018-2019 TMSCA Middle School Number Sense Gear-Up Key

(1) 87

(2) 120

(3) 351

(4) $\frac{43}{50}$

(5) 407

(6) $\frac{1}{4}$

(7) 5

(8) 256

(9) 23

***(10) 3206 – 3542**

(11) $\frac{11}{17}$

(12) 6

(13) 3536

(14) 7

(15) 125

(16) 8645

(17) 3108

(18) 900

(19) $16\frac{1}{4}$

***(20) 681629 – 753379**

(21) 1.331

(22) 5625

(23) 1800

(24) 71928

(25) 205

(26) $\frac{5}{9}$

(27) 79

(28) 11

(29) 8

***(30) 569 – 628**

(31) 137

(32) 1.20

(33) 90

(34) 11

(35) $48\frac{24}{25}$

(36) 3610

(37) 216

(38) 25

(39) 8.5

***(40) 534 – 589**

(41) 31

(42) 128

(43) 162

(44) 30

(45) $5\frac{9}{28}$

(46) 10

(47) 5

(48) 256

(49) 55

***(50) 11559 – 12775**

(51) 159

(52) $20\frac{15}{28}$

(53) $\frac{22}{3}$ or $7\frac{1}{3}$

(54) 60

(55) 150

(56) 29

(57) $-\frac{4}{3}$ or $-1\frac{1}{3}$

(58) 27

(59) $\frac{140}{17}$ or $8\frac{4}{17}$

***(60) 563 –621**

(61) – 18

(62) 540

(63) 200000

(64) 31

(65) 17

(66) 8

(67) 264

(68) 50

(69) $\frac{14}{45}$

***(70) 51443 – 56857**

(71) $\frac{11}{8}$

(72) 60

(73) 2

(74) 370881

(75) 20

(76) 1225

(77) 4

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

(79) – 10

***(80) 401280 – 443520**