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

T M S C A   M I D D L E   S C H O O L

N U M B E R   S E N S E

R E G I O N A L   T E S T ©

M A R C H   5 ,   2 0 2 2

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 <u>non-black</u> 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 <u>FIVE</u> points. <u>FOUR</u> points will be deducted for all problems answered incorrectly or skipped before the last problem attempted.

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(1) $2021 + 2022 =$ _____

(2) $2021 - 2022 =$ _____

(3) $18\% =$ _____ (fraction)

(4) $120906 \div 3 =$ _____

(5) $64 \times 15 =$ _____

(6) $44 \times 75 =$ _____

(7) $4\dfrac{3}{4} =$ _____ (decimal)

(8) $14 \times 6 + 8 \times 14 =$ _____

(9) $4.5 + 12.55 =$ _____

*(10) $622 + 444 + 512 =$ _____

(11) $63 \times 67 =$ _____

(12) $79 \times 81 =$ _____

(13) $93 \times 13 =$ _____

(14) $(109)^2 =$ _____

(15) $92 \times 97 =$ _____

(16) Which is larger, $\dfrac{7}{8}$ or 0.88 ? _____

(17) 80% of 90 less 12 = _____

(18) $6\dfrac{2}{9} - 2\dfrac{2}{3} =$ _____ (mixed number)

(19) The median of $48, 36, 42$ and 38 is _____

*(20) $673 \times 44 =$ _____

(21) $7\dfrac{1}{4} \times 8\dfrac{5}{7} =$ _____ (mixed number)

(22) 2 gallons + 2 quarts = _____ fluid ounces

(23) $16^2 + 48^2 =$ _____

(24) The LCM of 14, 28 and 56 is _____

(25) $9\dfrac{2}{5} \times 9\dfrac{3}{5} =$ _____ (mixed number)

(26) $0.393939\ldots =$ _____ (fraction)

(27) $15 \times 1\dfrac{4}{5} =$ _____

(28) The sum of the prime numbers between 90 and 100 is _____

(29) 234 base 6 = _____ base 10

*(30) $32 \times 28 + 67 \times 73 =$ _____

(31) $(15)^3 =$ _____

(32) If the area of a square is 529 cm², then the perimeter is _____cm

(33) The slope of the line $9x - 3y = 5$ is _____

(34) The measure of each interior angle of a regular decagon is _____°

(35) $27^2 - 33^2 =$ _____

(36) $(13x + 8)^2 = ax^2 + bx + c.$ $a + b + c =$ _____

(37) $284 \times 111 =$ _____

(38) $|12 - 5| + 7 + |8 - 15| =$ _____

(39) If the area of a circle is 144π, then the circumference is _____ π

*(40) $83572 \div 166 =$ _____

(41) $214 \times 13 =$ _____

(42) $(75)^2 =$ _____

(43) The 17th triangular number is _____

(44) If $7^x = 10$, then $7^{x+3} =$ _____

(45) $2+4+6+8+10+...+38+40 =$ _____

(46) The distance between the points $(5, -3)$ and $(-3, 5)$ is k. $k^2 =$ _____

(47) $F = \{2, 7, 9, 16, 25, 41, a, b, 173, ...\}$ b = _____

(48) $552_6 - 135_6 =$ _____ $_6$

(49) The larger root of $(2x+1)^2 = \dfrac{49}{64}$ is _____

*(50) $\sqrt{733} \times \sqrt{1072} =$ _____

(51) $(806)^2 =$ _____

(52) $2775 \div 111 =$ _____

(53) How many positive integers less than or equal to 45 are relatively prime to 45? _____

(54) 132 ft/s = _____ mph

(55) 30 is what percent more than 25? _____%

(56) The reciprocal of -4.2 is _____

(57) $11011010_2 =$ _____ $_4$

(58) $(995)^2 =$ _____

(59) $19 \times \dfrac{22}{25} =$ _____ (mixed number)

*(60) $\sqrt[3]{522} \times \sqrt[3]{737} \times \sqrt[3]{1322} =$ _____

(61) The probability of rolling two dice and getting a sum of 6, 7 or 8 is _____

(62) If the roots of $2x^2 + x - 6 = 0$ are P and Q, then $PQ + (P + Q) =$ _____

(63) The product of the coefficients of $(x - 2y)^2$ is _____

(64) If $\dfrac{1}{7} + \dfrac{1}{9} = \dfrac{1}{x}$, then $x =$ _____

(65) If the diagonal of a square is $\sqrt{154}$ in, then the area is _____ in^2

(66) The first 4 digits of the decimal for $\dfrac{28}{33}$ are 0._____

(67) $1008 \times 1012 =$ _____

(68) $67 \times 1111 =$ _____

(69) $1^2 - 2^2 + 3^2 - 4^2 + 5^2 + ... + 9^2 - 10^2 =$ _____

*(70) 150 rods = _____ feet

(71) $85\dfrac{5}{7}\% =$ _____ (fraction)

(72) The leg opposite the 30° angle in a right triangle = 18. The hypotenuse = _____

(73) $32 + 16 + 8 + 4 + 2 + ... =$ _____

(74) The arithmetic sequence $5, 11, 17, 23, 29, ..., 119, 125$ has _____ terms

(75) The largest negative integral value of x such that $|x + 4| > 9$ is _____

(76) $(3)(7)(39)(74) =$ _____

(77) If m and n are natural numbers and $3\dfrac{3}{m} \times n\dfrac{2}{3} = 12$, then $m + n =$ _____

(78) $6 + 7 + 13 + 20 + 33 + ... + 139 + 225 =$ _____

(79) The sum of the integral solutions of $|3x + 9| \le 27$ is _____

*(80) Katie ran 24 miles yesterday. How many yards did she run? _____

2021-2022 TMSCA MSNS Region Key

(1) 4043

(2) −1

(3) $\dfrac{9}{50}$

(4) 40302

(5) 960

(6) 3300

(7) 4.75

(8) 196

(9) 17.05

*(10) 1500−1656

(11) 4221

(12) 6399

(13) 1209

(14) 11881

(15) 8924

(16) .88 or $\dfrac{22}{25}$

(17) 60

(18) $3\dfrac{5}{9}$

(19) 40

*(20) 28132−31092

(21) $63\dfrac{5}{28}$

(22) 320

(23) 2560

(24) 56

(25) $90\dfrac{6}{25}$

(26) $\dfrac{13}{33}$

(27) 27

(28) 97

(29) 94

*(30) 5498−6076

(31) 3375

(32) 92

(33) 3

(34) 144

(35) −360

(36) 441

(37) 31524

(38) 21

(39) 24

*(40) 479−528

(41) 2782

(42) 5625

(43) 153

(44) 3430

(45) 420

(46) 128

(47) 107

(48) 413

(49) $-\dfrac{1}{16}$ or −.0625

*(50) 843−930

(51) 649636

(52) 25

(53) 24

(54) 90

(55) 20

(56) $-\dfrac{5}{21}$

(57) 3122

(58) 990025

(59) $16\dfrac{18}{25}$

*(60) 759−838

(61) $\dfrac{4}{9}$

(62) $-\dfrac{7}{2}, -3\dfrac{1}{2}, -3.5$

(63) −16

(64) $\dfrac{63}{16}$ or $3\dfrac{15}{16}$

(65) 77

(66) 8484

(67) 1020096

(68) 74437

(69) −55

*(70) 2352−2598

(71) $\dfrac{6}{7}$

(72) 36

(73) 64

(74) 21

(75) −14

(76) 60606

(77) 14

(78) 582

(79) −57

*(80) 40128−44352

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