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
T E S T # 1 1 ©

F E B R U A R Y   1 3,   2 0 2 1

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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(1) $457 + 136 =$ _____

(2) $239 - 259 =$ _____

(3) $44 \times 25 =$ _____

(4) $7.65 - 3.5 =$ _____ (decimal)

(5) $\dfrac{15}{8} \times \dfrac{2}{5} =$ _____ (fraction)

(6) $\dfrac{3}{8} =$ _____ % (mixed number)

(7) $8 \times 10.2 =$ _____

(8) $30 + 33 + 36 =$ _____

(9) $15 \times 6 + 14 \times 15 =$ _____

*(10) $662 + 413 - 67 =$ _____

(11) $6573 \div 9$ has a remainder of _____

(12) $35^2 =$ _____

(13) $144 \div 1.2 =$ _____

(14) $5\dfrac{1}{5} - 2\dfrac{9}{10} =$ _____ (mixed number)

(15) 64 is what percent of 80? _____%

(16) The GCF of 24 and 60 is _____

(17) $6\dfrac{3}{8} \times 8\dfrac{1}{3} =$ _____ (mixed number)

(18) $73 \times 77 =$ _____

(19) The mean of 44, 46, 36, and 30 is _____

*(20) $788 \times 4.12 =$ _____

(21) $113 \times 106 =$ _____

(22) 25% of 63 is 75% of _____

(23) $0.123123123... =$ _____ (fraction)

(24) $4\dfrac{2}{9} \times 4\dfrac{7}{9} =$ _____ (mixed number)

(25) $91^2 =$ _____

(26) $\dfrac{3}{4} + \dfrac{3}{8} + \dfrac{3}{16} =$ _____ (mixed number)

(27) The largest prime divisor of 114 is _____

(28) What is 8% tax on $85.00? $_____

(29) 36 pints = _____ gallons

*(30) $56 \times 19 + 52 \times 21 =$ _____

(31) The slope of the line $12x + 3y = 5$ is _____

(32) Two numbers have a sum of 27, a
product of 180, and a positive difference of _____

(33) $67 \times 23 =$ _____

34) $62 \times 68 + 9 =$ _____

(35) $96 \times 105 =$ _____

(36) The additive inverse of 0.848484… is _____

(37) Find the smallest integer k, where
 k > 1, such that $3k + 4$ is a perfect square _____

(38) If $4x + 12 = 60,$ then $x^2 =$ _____

(39) How many integers between
    26 and 92 are divisible by 8? _____

*(40) $\sqrt[3]{70000} =$ _____

(41) The diameter of a circle
    with area = 81π cm^2 is _____ cm

(42) $\sqrt[3]{1728} =$ _____

(43) $555 \times \dfrac{8}{37} =$ _____

(44) The 19$^{\text{th}}$ triangular number is _____

(45) $19 \times 303 =$ _____

(46) $\dfrac{27}{40} =$ _____ (decimal)

(47) $0.185 =$ _____ (fraction)

(48) $F = \{3, 5, 8, 13, 21, 34, m, n\}$. $m + n =$ _____

(49) The smaller root of $(4x + 1)^2 = \dfrac{4}{9}$ is _____

*(50) $25 \times 35 \times 45 =$ _____

(51) $509^2 =$ _____

(52) $101101_2 =$ _____ $_4$

(53) $143 \times 105 =$ _____

(54) If the midpoint of the line segment
with endpoints $(5, 9)$ and $(-3, 7)$
is (a, b), then $a + b =$ _____

(55) $25 \times 1111 =$ _____

(56) 135 mph = _____ ft/s

(57) $993^2 =$ _____

(58) $13^{-3} + 13^{-1} =$ _____

(59) $\dfrac{11}{14} - \dfrac{34}{41} =$ _____

*(60) $16^4 \times 25 \div 16^2 =$ _____

(61) The sixth pentagonal number is _____

(62) $253_6 \times 4_6 =$ _____ $_6$

(63) If the roots of $2x^2 + 2x - 40 = 0$
are P and Q, then $PQ + (P + Q) =$ _____

(64) If the odds of winning are $\dfrac{5}{9}$,
then the probability of losing is _____

(65) If $222_b = 86$, then $111_b =$ _____

(66) If $54^6 \div 6 = (2^x)(3^y)$, then $x + y =$ _____

(67) If $(11)^x = 3$, then $(11)^{(x+3)} =$ _____

(68) The sum of the negative
integers x such that $5x + 7 \geq -18$ is _____

(69) The first 4 digits of
the decimal for $\dfrac{28}{45}$ are 0._____

*(70) $7.4 \times 9.9 \times \pi \times e =$ _____

(71) $38^2 - 36^2 + 34^2 - 32^2 =$ _____

(72) $144 \div 0.08333... =$ _____

(73) $5.0888... =$ _____ (mixed number)

(74) $8 + 13 + 18 + 23 + ... + 63 =$ _____

(75) If $f(x) = \dfrac{9x + 6}{4} - 17$, then $f^{-1}(7) =$ _____

(76) The volume of a cylinder is 972π in^3.
If the height is 12,
then the diameter is _____ in

(77) $\dfrac{7}{12} + \dfrac{7}{60} + \dfrac{7}{140} =$ _____ (fraction)

(78) $16^3 - 15^3 =$ _____

(79) $7 + 5 + 12 + 17 + 29 + ... + 196 + 317 =$ _____

*(80) $(1 + 2 + 3 + 4 + 5 + ... + 13)^2 =$ _____

2020-2021 TMSCA MSNS Test 11 Key

(1) 593

(2) −20

(3) 1100

(4) 4.15

(5) $\dfrac{3}{4}$

(6) $37\dfrac{1}{2}$

(7) 81.6

(8) 99

(9) 300

*(10) 958−1058

(11) 3

(12) 1225

(13) 120

(14) $2\dfrac{3}{10}$

(15) 80

(16) 12

(17) $53\dfrac{1}{8}$

(18) 5621

(19) 39

*(20) 3085−3408

(21) 11978

(22) 21

(23) $\dfrac{41}{333}$

(24) $20\dfrac{14}{81}$

(25) 8281

(26) $1\dfrac{5}{16}$

(27) 19

(28) 6.80

(29) $4.5, 4\dfrac{1}{2}, \dfrac{9}{2}$

*(30) 2049−2263

(31) −4

(32) 3

(33) 1541

(34) 4225

(35) 10080

(36) $-\dfrac{28}{33}$

(37) 4

(38) 144

(39) 8

*(40) 40−43

(41) 18

(42) 12

(43) 120

(44) 190

(45) 5757

(46) .675

(47) $\dfrac{37}{200}$

(48) 144

(49) $-\dfrac{5}{12}$

*(50) 37407−41343

(51) 259081

(52) 231

(53) 15015

(54) 9

(55) 27775

(56) 198

(57) 986049

(58) $\dfrac{170}{2197}$

(59) $-\dfrac{25}{574}$

*(60) 6080−6720

(61) 51

(62) 1540

(63) −21

(64) $\dfrac{9}{14}$

(65) 43

(66) 22

(67) 3993

(68) −15

(69) 6222

*(70) 595−656

(71) 280

(72) 1728

(73) $5\dfrac{4}{45}$

(74) 426

(75) 10

(76) 18

(77) $\dfrac{3}{4}$

(78) 721

(79) 825

*(80) 7867−8695