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   2 7 ,   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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2020-2021 TMSCA Middle School Number Sense Region Test

(1) $357 - 264 =$ _____

(2) $1239 + 341 =$ _____

(3) $38\% =$ _____ (fraction)

(4) $4.35 + 1.2 =$ _____ (decimal)

(5) $64 \times 75 =$ _____

(6) $\dfrac{1}{8} =$ _____ % (mixed number)

(7) $3248 \div 8 =$ _____

(8) $20 + 25 + 30 =$ _____

(9) $\dfrac{9}{16} - \dfrac{1}{4} =$ _____ (fraction)

*(10) $755 + 238 - 98 =$ _____

(11) $49 \div 0.7 =$ _____

(12) $55^2 =$ _____

(13) 70% of 80 less 26 is _____

(14) $6\dfrac{1}{3} - 2\dfrac{1}{2} =$ _____ (mixed number)

(15) $74 \times 34 =$ _____

(16) The GCF of 30 and 75 is _____

(17) $\dfrac{5}{7} \div \dfrac{15}{28} =$ _____ (mixed number)

(18) $84 \times 86 =$ _____

(19) The largest prime number less than 88 is _____

*(20) $385 \times 7.15 =$ _____

(21) $91 \times 92 =$ _____

(22) 20% of 56 is 80% of _____

(23) An angle complementary to 41° measures _____ °

(24) $5\dfrac{3}{8} \times 5\dfrac{5}{8} =$ _____ (mixed number)

(25) $|13 - 6| + |4 - 12| =$ _____

(26) $\dfrac{1}{4} + \dfrac{1}{8} + \dfrac{1}{16} =$ _____ (fraction)

(27) The cube root of -343 is _____

(28) What is 4.5% tax on $18.00? $_____

(29) $\dfrac{11}{9} + \dfrac{9}{11} =$ _____ (mixed number)

*(30) $31 \times 26 + 33 \times 24 =$ _____

(31) $444 \times 12 =$ _____

(32) Two numbers have a sum of 23, a product of 120, and a positive difference of _____

(33) If $f(x) = x^2 + 6x + 9$, then $f(16) =$ _____

34) $22 \times 24 + 1 =$ _____

(35) $\dfrac{4}{33}$ of a gallon = _____ in^3

(36) The additive inverse of 0.212121… is _____

(37) If the area of a square is 289, then the perimeter is _____

(38) If $5x - 8 = 22$, then $x^3 =$ _____

(39) The number of the positive integral divisors of 24 is _____

*(40) $\sqrt[3]{36675} =$ _____

(41) $(9x + 2)^2 = ax^2 + bx + c.$ $b + c =$ _____

(42) $\sqrt[3]{2197} =$ _____

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(43) The distance between
the points $(8, 8)$ and $(-1, -4)$ is _____

(44) The 14th triangular number is _____

(45) The total surface area of a
cube with edge = 11 cm is _____ cm²

(46) $\dfrac{11}{40} =$ _____ (decimal)

(47) $993 \times 997 =$ _____

(48) $F = \{4, 3, 7, 10, 17, 27, m, n\}$. $m + n =$ _____

(49) $246_7 + 531_7 =$ _____ $_7$

*(50) $26 \times 30 \times 34 =$ _____

(51) The slope of a line containing
the points $(4, 8)$ and $(-3, -6)$ is _____

(52) $3231_4 =$ _____ $_2$

(53) $(22 + 26 \times 14) \div 6$ has a remainder of _____

(54) If the midpoint of the line segment
with endpoints $(-3, -5)$ and $(4, 6)$
is (a, b), then $a + b =$ _____

(55) $8325 \div 111 =$ _____

(56) 110 ft/s _____ mph

(57) $1006 \times 1007 =$ _____

(58) $15^{-3} + 15^{-2} + 15^{-1} =$ _____

(59) $566\dfrac{2}{3}\%$ of $24 =$ _____

*(60) $13^4 \times 17 \div 13^2 =$ _____

(61) If $6^{x+2} = 252$, then $6^x =$ _____

(62) $573_9 \times 7_9 =$ _____ $_9$

(63) If the vertex of the parabola
$y = x^2 - 8x + 12$ is (h, k), then $k =$ _____

(64) If the odds of losing are $\dfrac{7}{13}$,
then the probability of winning is _____

(65) If $39^2 - 31^2 = 16 \times k$, then $k =$ _____

(66) If $45^6 \div 9 = \left(3^x\right)\left(5^y\right)$, then $x + y =$ _____

(67) The area of an isosceles trapezoid
with a height of 15 and
base lengths of 18 and 22 is _____

(68) The sum of the positive
integers x such that $2x + 8 \le 20$ is _____

(69) The first 4 digits of
the decimal for $\dfrac{4}{15}$ are 0._____

*(70) $11 \times 22 \times 33 =$ _____

(71) $2^3 + 3^3 + 4^3 + 5^3 =$ _____

(72) $121 \div 0.91666... =$ _____

(73) $8^6 \div 5$ has a remainder of _____

(74) $6 + 12 + 18 + 24 + ... + 66 =$ _____

(75) $18 + 6 + 2 + \dfrac{2}{3} + \dfrac{2}{9} + ... =$ _____

(76) The volume of a cylinder is 192π in³.
If the radius equals one-third
of the height, then the height is _____ in

(77) $\dfrac{5}{8} + \dfrac{5}{24} + \dfrac{5}{48} =$ _____ (fraction)

(78) $15^3 - 14^3 =$ _____

(79) If $(6)(13)(37)(k) = 141414$, then $k =$ _____

*(80) $(1 + 2 + 3 + 4 + 5 + ... + 14)^2 =$ _____

2020-2021 TMSCA MSNS Region Meet Key

(1) 93

(2) 1580

(3) $\dfrac{19}{50}$

(4) 5.55

(5) 4800

(6) $12\dfrac{1}{2}$

(7) 406

(8) 75

(9) $\dfrac{5}{16}$

*(10) $851-939$

(11) 70

(12) 3025

(13) 30

(14) $3\dfrac{5}{6}$

(15) 2516

(16) 15

(17) $1\dfrac{1}{3}$

(18) 7224

(19) 83

*(20) $2616-2890$

(21) 8372

(22) 14

(23) 49

(24) $30\dfrac{15}{64}$

(25) 15

(26) $\dfrac{7}{16}$

(27) -7

(28) .81

(29) $2\dfrac{4}{99}$

*(30) $1519-1677$

(31) 5328

(32) 7

(33) 361

(34) 529

(35) 28

(36) $-\dfrac{7}{33}$

(37) 68

(38) 216

(39) 8

*(40) $32-34$

(41) 40

(42) 13

(43) 15

(44) 105

(45) 726

(46) .275

(47) 990021

(48) 115

(49) 1110

*(50) $25194-27846$

(51) 2

(52) 11101101

(53) 2

(54) 1

(55) 75

(56) 75

(57) 1013042

(58) $\dfrac{241}{3375}$

(59) 136

*(60) $2730-3016$

(61) 7

(62) 4463

(63) -4

(64) $\dfrac{13}{20}$

(65) 35

(66) 16

(67) 300

(68) 21

(69) 2666

*(70) $7587-8385$

(71) 224

(72) 132

(73) 4

(74) 396

(75) 27

(76) 12

(77) $\dfrac{15}{16}$

(78) 631

(79) 49

*(80) $10474-11576$