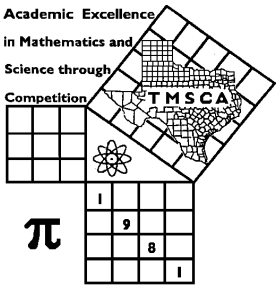
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

PLACE LABEL BELOW

Name:_____ School:_____

SS/ID Number:_____ City:_____

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



TMSCA MIDDLE SCHOOL

NUMBER SENSE

TUNE-UP TEST©

2021

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 Tune Up Test

(1) $1247 + 852 =$ _____

(2) $667 - 867 =$ _____

(3) $44 \times 25 =$ _____

(4) $26\% =$ _____ (fraction)

(5) $276 \times 11 =$ _____

(6) $\frac{6}{7} + \frac{5}{14} =$ _____ (mixed number)

(7) $75 \div 9 =$ _____ (mixed number)

(8) $30 + 45 + 60 =$ _____

(9) $17(7) + 14(7) + 9(7) =$ _____

***(10)** $1388 + 614 + 392 =$ _____

(11) $94 \times 91 =$ _____

(12) $17 \times 97 =$ _____

(13) 60% of 90 plus 46 = _____

(14) $113 \times 106 =$ _____

(15) $87 \times 93 =$ _____

(16) $4\frac{1}{3} \times 9\frac{3}{4} =$ _____ (mixed number)

(17) $53 \times 57 =$ _____

(18) $6\frac{5}{6} \times 6\frac{1}{6} =$ _____ (mixed number)

(19) $7\frac{1}{3} - 4\frac{7}{9} =$ _____ (mixed number)

***(20)** $94987 \div 483 =$ _____

(21) $95 \times 35 =$ _____

(22) 3 yards + 1 foot + 2 inches = _____ inches

(23) $48 \times 125 =$ _____

(24) $324 \times 13 =$ _____

(25) The cube root of -125 is _____

(26) 157 base 10 = _____ base 7

(27) $24^2 + 72^2 =$ _____

(28) $99 \times 104 =$ _____

(29) If Mary has $8.75 in quarters, then she has _____ quarters

***(30)** $\sqrt{596565} =$ _____

(31) $37^2 + 67^2 =$ _____

(32) $58^2 =$ _____

(33) 0.696969 … = _____ (fraction)

34) $\frac{11}{21}$ of a gallon = _____ in^3

(35) If 9 ads cost $7.50, then 15 ads cost $_____

(36) If $5^{2x} = 625$, then $x =$ _____

(37) Two numbers have a sum of 24, a product of 128, and a positive difference of _____

(38) The additive inverse of 0.272727… is _____

(39) If $f(x) = x^2 - 14x + 49$, then $f(24) =$ _____

***(40)** $\sqrt[3]{80234} =$ _____

(41) $653876 \div 11$ has a remainder of _____

(42) $140°\,F =$ _____ °C

(43) $286 \times 77 =$ _____

(44) $992^2 =$ _____

(45) The distance between the points $(6,9)$ and $(-1,-15)$ is _____

(46) $345_8 + 765_8 =$ _____$_8$

(47) The larger root of $(2x-1)^2 = \frac{25}{36}$ is _____

(48) $S = \{2,8,10,18,28,46,m,n,...\}$. $n =$ _____

(49) How many integers between 16 and 74 are divisible by 5? _____

***(50)** $\sqrt{481} \times \sqrt{681} =$ _____

(51) 176 ft/s = _____ mph

(52) $(27 + 34 \times 14) \div 6$ has a remainder of _____

(53) $(908)^2 =$ _____

(54) $629 \times 111 =$ _____

(55) $0.636363... + 0.333... =$ _____

(56) The area of an equilateral triangle with a side = 14 cm is _____ $\sqrt{3}$ cm^2

(57) $9^{-3} + 9^{-2} + 9^{-1} =$ _____

(58) If $f(x) = x^2 - 3$, then $f\left(f(4)\right) =$ _____

(59) $10101101_2 =$ _____$_8$

***(60)** $\pi^6 \times e^3 =$ _____

(61) $552_7 \div 6_7 =$ _____$_7$

(62) $\frac{11}{12} - \frac{32}{37} =$ _____

(63) The sum of the positive integral divisors of 44 is _____

(64) $\frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} =$ _____

(65) If $215_b = 110$, then $303_b =$ _____

(66) $8 \times \frac{13}{17} =$ _____ (mixed number)

(67) $41^3 - 40^3 =$ _____

(68) $57^2 - 43^2 = 28 \times k$. $k =$ _____

(69) 27% of $377\frac{7}{9} =$ _____

***(70)** $12 \times 17 \times 22 =$ _____

(71) How many distinct 6-letter arrangements can be made from the letters of the word butter? _____

(72) $555 \times \frac{2}{27} =$ _____ (mixed number)

(73) The sum of the integral solutions of $|7x - 21| < 35$ is _____

(74) If $f(x) = \frac{5x+6}{3} + 5$, then $f^{-1}(12) =$ _____

(75) 54 base 6 is _____ base 4

(76) The first 4 digits of the decimal for $\frac{87}{111}$ is 0._____

(77) If $(13)(37)(63)(k) = 121212$, then $k =$ ____

(78) $3+1+4+5+9+...+60+97 =$ _____

(79) The smallest angle formed by the hands of a clock at 3:45 is _____°

***(80)** The volume of a circular cone with diameter = 14 cm and height = 18 cm is _____ cm^3

2020-2021 TMSCA MSNS Tune Up Test Key

(1) 2099

(2) -200

(3) 1100

(4) $\frac{13}{50}$

(5) 3036

(6) $1\frac{3}{14}$

(7) $8\frac{1}{3}$

(8) 135

(9) 280

***(10)** $2275-2513$

(11) 8554

(12) 1649

(13) 100

(14) 11978

(15) 8091

(16) $42\frac{1}{4}$

(17) 3021

(18) $42\frac{5}{36}$

(19) $2\frac{5}{9}$

***(20)** $187-206$

(21) 3325

(22) 122

(23) 6000

(24) 4212

(25) -5

(26) 313

(27) 5760

(28) 10296

(29) 35

***(30)** $734-810$

(31) 5858

(32) 3364

(33) $\frac{23}{33}$

(34) 121

(35) 12.50

(36) 2

(37) 8

(38) $-\frac{3}{11}$

(39) 289

***(40)** $41-45$

(41) 3

(42) 60

(43) 22022

(44) 984064

(45) 25

(46) 1332

(47) $\frac{11}{12}$

(48) 120

(49) 11

***(50)** $544-600$

(51) 120

(52) 5

(53) 824464

(54) 69819

(55) $\frac{32}{33}$

(56) 49

(57) $\frac{91}{729}$

(58) 166

(59) 255

***(60)** $18345-20275$

(61) 65

(62) $\frac{23}{444}$

(63) 84

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

(65) 150

(66) $6\frac{2}{17}$

(67) 4921

(68) 50

(69) 102

***(70)** $4264-4712$

(71) 360

(72) $41\frac{1}{9}$

(73) 27

(74) 3

(75) 202

(76) 7837

(77) 4

(78) 253

(79) $157.5, 157\frac{1}{2}, \frac{315}{2}$

***(80)** $878-969$