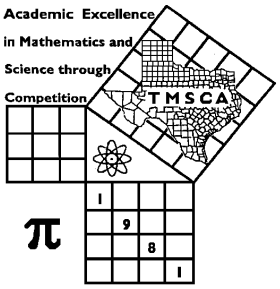
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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

TEST#11A©

FEBRUARY 20, 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 Test #11A

(1) $2345 + 346 =$ _____

(2) $888 - 469 =$ _____

(3) $92\% =$ _____ **(fraction)**

(4) $28 \times 15 =$ _____

(5) $\frac{15}{16} - \frac{3}{8} =$ _____ **(fraction)**

(6) $112 \div 5 =$ _____ **(mixed number)**

(7) $864 \times 11 =$ _____

(8) $8\frac{2}{5} - \frac{7}{10} =$ _____ **(mixed number)**

(9) $8436 \div 9$ **has a remainder of** _____

***(10)** $579 + 642 + 2222 =$ _____

(11) $76 \times 74 =$ _____

(12) $106 \times 114 =$ _____

(13) $66 \times 54 =$ _____

(14) $13 \times 19 + 6 \times 19 =$ _____

(15) 70% **of 90 less 23 =** _____

(16) $96 \times 91 =$ _____

(17) $87 \times 25 =$ _____

(18) $15(7) + 21(7) - 6(7) =$ _____

(19) $4\frac{2}{3} \times 9\frac{3}{4} =$ _____ **(mixed number)**

***(20)** $558 \times 825 =$ _____

(21) $85 \times 35 =$ _____

(22) 234 **base 7 =** _____ **base 10**

(23) **If** $n = \sqrt{196}$, **then** $10n + 10 =$ _____

(24) $7\frac{3}{5} \times 7\frac{2}{5} =$ _____ **(mixed number)**

(25) $0.4666\ldots =$ _____ **(fraction)**

(26) The largest prime divisor of 117 is _____

(27) 18% **of 126 is** 54% **of** _____

(28) If $(5x - 8)^2 = ax^2 + bx + c$, **then** $b + c =$ _____

(29) $1\frac{1}{7} \div \frac{16}{21} =$ _____ **(mixed number)**

***(30)** $\sqrt{467253} =$ _____

(31) $77^2 + 63^2 =$ _____

(32) $9 + 13 + 17 + 21 + 25 + 29 =$ _____

(33) If 12 bots cost \$24.60,
then 18 bots cost \$_____

(34) The number of the positive
integral divisors of 56 is _____

(35) $\frac{8}{9} - \frac{9}{8} =$ _____

(36) $\frac{5}{9} + \frac{5}{18} + \frac{5}{36} =$ _____

(37) $59 \times 111 =$ _____

(38) If $68^2 - 32^2 = 72 \times k$, **then** $k =$ _____

(39) $\frac{3}{7}$ **of a gallon =** _____ **cubic inches**

***(40)** 2640 **yards =** _____ **inches**

(41) $28^2 =$ _____

(42) If $6x + 5y = 7$ **and** $3x + 2y = 1$, **then** $y =$ _____

(43) $10^{-1}+10^{-2}+10^{-3}=$ _____

(44) $86°\,F=$ _____ $°\,C$

(45) $543_9-276_9=$ _____$_9$

(46) $C=\{4,6,8,9,10,12,14,15,m,n\}.\ m+n=$ ____

(47) $\sqrt[3]{300763}=$ _____

(48) $17\times\frac{19}{15}=$ _____ (mixed number)

(49) The larger root of $(3x-2)^2=\frac{4}{9}$ is _____

*(50) $14\times20\times26=$ _____

(51) $(23+14\times16)\div6$ has a remainder of _____

(52) $(709)^2=$ _____

(53)How many positive integers less than or equal to 66 are relatively prime to 66? _____

(54) The hypotenuse of a right triangle with integral sides is 61. The area is _____

(55) $\frac{1}{35}+\frac{1}{63}+\frac{1}{99}=$ _____ (fraction)

(56) $\frac{8}{11}-\frac{23}{34}=$ _____

(57) $11^3=$ _____

(58) $3213_4=$ _____$_2$

(59) If the height of an equilateral triangle is $4\sqrt{3}$, then the perimeter = _____

*(60) $\sqrt{1241}\times\sqrt{1572}=$ _____

(61) The probability of rolling two dice and getting a sum of 2, 10 or 11 is _____

(62) If $24^8\div18=\left(2^x\right)\left(3^y\right)$, then $x+y=$ _____

(63) $323_7\div4_7=$ _____$_7$

(64) If the roots of $2x^2+17x+35=0$ are P and Q, then $PQ+(P+Q)=$ _____

(65) $21+18+15\frac{3}{7}+13\frac{11}{49}+...=$ _____

(66) $999\times\frac{3}{37}=$ _____

(67) If $7^{x+2}=294$, then $7^x=$ _____

(68) If the vertex of the parabola $y=x^2-8x+13$ is (h, k), then $h+k=$ _____

(69) The first 4 digits of the decimal for $\frac{11}{15}$ is 0._____

*(70) $e^5\times\pi^5=$ _____

(71) The geometric mean of 18, 20 and 75 is_____

(72) If $x^2+y^2=185$, $x>y>4$ and both x and y are integers, then $x+y=$ _____

(73) $\left(432_6\right)\times\left(5_6\right)=$ _____$_6$

(74) If $f(x)=\frac{2x-7}{9}+13$, then $f^{-1}(16)=$ _____

(75) $7+2+9+11+20+...+133+215=$ _____

(76) If the probability of winning a game is $\frac{11}{15}$, then the odds of losing a game are _____

(77) $51^3-50^3=$ _____

(78) If $(36)(37)(k)=121212$, then $k=$ _____

(79) The sum of the integral solutions of $|4x+20|\le56$ is _____

*(80) $11\times22\times33\times44=$ _____

2020-2021 TMSCA MSNS Test #11A Key

(1) 2691

(2) 419

(3) $\frac{23}{25}$

(4) 420

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

(6) $22\frac{2}{5}$

(7) 9504

(8) $7\frac{7}{10}$

(9) 3

***(10)** $3271-3615$

(11) 5624

(12) 12084

(13) 3564

(14) 361

(15) 40

(16) 8736

(17) 2175

(18) 210

(19) $45\frac{1}{2}$

***(20)** $437333-483367$

(21) 2975

(22) 123

(23) 150

(24) $56\frac{6}{25}$

(25) $\frac{7}{15}$

(26) 13

(27) 42

(28) -16

(29) $1\frac{1}{2}$

***(30)** $650-717$

(31) 9898

(32) 114

(33) 36.90

(34) 8

(35) $-\frac{17}{72}$

(36) $\frac{35}{36}$

(37) 6549

(38) 50

(39) 99

***(40)** $90288-99792$

(41) 784

(42) 5

(43) $\frac{111}{1000}$

(44) 30

(45) 256

(46) 34

(47) 67

(48) $21\frac{8}{15}$

(49) $\frac{8}{9}$

***(50)** $6916-7644$

(51) 1

(52) 502681

(53) 20

(54) 330

(55) $\frac{3}{55}$

(56) $\frac{19}{374}$

(57) 1331

(58) 11100111

(59) 24

***(60)** $1327-1466$

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

(62) 29

(63) 56

(64) 9

(65) 147

(66) 81

(67) 6

(68) 1

(69) 7333

***(70)** $43147-47688$

(71) 30

(72) 19

(73) 3444

(74) 17

(75) 561

(76) $\frac{4}{11}$

(77) 7651

(78) 91

(79) -145

***(80)** $333815-368953$