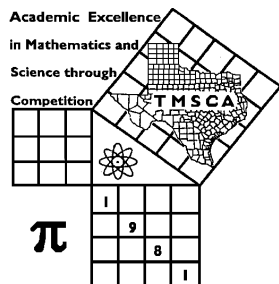


1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	
PLACE LABEL BELOW			
Name: _____ School: _____			
SS/ID Number: _____ City: _____			
Grade: 5 6 7 8 Classification: 1A 2A 3A 4A 5A 6A			



TMSCA MIDDLE SCHOOL

NUMBER SENSE

TEST # 10 ©

FEBRUARY 3, 2018

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.

2017-2018 TMSCA Middle School Number Sense Test 10

- (1) $273 + 71 =$ _____
- (2) $46 \times 4 =$ _____
- (3) $11 \times 79 =$ _____
- (4) 4.5 feet = _____ inches
- (5) 0.444 = _____ (fraction)
- (6) $7243 \div 8$ has a remainder of _____
- (7) $\frac{3}{5} + \frac{2}{7} =$ _____ (fraction)
- (8) $(4^2 \times 5 + 1) \div 3 =$ _____
- (9) $1\frac{3}{5} \times 25 =$ _____
- *(10) $1823 + 2018 + 2319 =$ _____
- (11) $136 \times 25 =$ _____
- (12) $67 \times 53 =$ _____
- (13) $98 \times 9.2 =$ _____ (decimal)
- (14) The smallest number which both 14 and 18 divide into with a remainder of 0 is _____
- (15) $45^2 =$ _____
- (16) $12\frac{1}{2}\% =$ _____ (fraction)
- (17) $96 \times 16 =$ _____
- (18) $16 \times 87\frac{1}{2} =$ _____
- (19) $2 + 4 + 6 + \dots + 22 =$ _____
- *(20) $626 \times 674 =$ _____
- (21) $(XIV)^2 =$ _____ (Arabic Numeral)
- (22) $85 \times 34 =$ _____
- (23) $6391 = 83 \times$ _____
- (24) The multiplicative inverse of $1\frac{3}{5}$ is _____
- (25) $257 \times 101 =$ _____
- (26) The smallest prime divisor of 305 is _____
- (27) $54 \times 0.444\dots =$ _____
- (28) $38^2 - 12^2 =$ _____
- (29) If a square has perimeter 36 cm, then its area is _____ cm^2
- *(30) $18^2 + 19^2 + 20^2 + 21^2 + 22^2 =$ _____
- (31) The two equal angles of an isosceles triangle each measure 64° . The other angle is _____ $^\circ$
- (32) $762 \times 111 =$ _____
- (33) $8\frac{3}{11} \times 8\frac{8}{11} =$ _____ (mixed number)
- (34) $21 \times 21 + 63 \times 63 =$ _____
- (35) 3 gallon = _____ cubic inches
- (36) 55 has how many positive integral divisors? _____
- (37) The average of x and x + 6 is 14, x = _____
- (38) If $f(x) = x^2 + 12x + 36$ and $f(14) =$ _____
- (39) $10\frac{3}{11} \times 9\frac{8}{11} = 100 -$ _____ (fraction)
- *(40) $273 \times 144 + 277 \times 155 =$ _____
- (41) If $x < 0$ and $x^4 = 81$, then $x^3 =$ _____
- (42) When the sum of the first 5 positive odd integers is added to the first 12 positive odd integers, the result is _____

- (43) If $\frac{2x-5}{3} = 7$, then $x =$ _____
- (44) If the area of a square is 84.5,
then the measure of a diagonal is _____
- (45) If $f(x) = \sqrt{5x+6}$, then $f(15) =$ _____
- (46) $\sqrt[3]{\frac{125}{8}} =$ _____ (mixed number)
- (47) A 10-element set has _____ 2-element subsets
- (48) How much greater in measure
is the interior angle of regular
nonagon than its exterior angle? _____ °
- (49) $132_7 =$ _____₁₀
- *(50) $\sqrt{432157} =$ _____
- (51) $25 \times \frac{25}{21} =$ _____ (mixed number)
- (52) The 3rd pentagonal number is _____
- (53) $16\frac{1}{4} \times 4\frac{1}{4} =$ _____ (mixed number)
- (54) A triangle with a largest angle of 100°
has angles in arithmetic progression.
The smallest angle has a measure of _____ °
- (55) $403^2 =$ _____
- (56) $(11)^6 \div 9$ has a remainder of _____
- (57) If $f(x) = 8x + 31$, then $f(4) - f(14) =$ _____
- (58) Find the slope of the line
 $y - 3 = m(x - 5)$ if the line contains (8, 5). _____
- (59) $43_8 - 16_8 =$ _____₈
- *(60) $333 \times 125 \times 960 =$ _____
- (61) $0.363636... =$ _____ (fraction)
- (62) The first 4 decimal places of $\frac{23}{90}$ is 0. _____
- (63) If $x^2 = 15$, then $(2x - 5)(2x + 5) =$ _____
- (64) $2^5 \times 5^6 \times 7 =$ _____
- (65) What is the x coefficient
of $(3x^2 + 2x + 5)(x - 3)$? _____
- (66) The sum of the coefficients of $(4x + 2)^3$ is _____
- (67) The y-intercept
of $f(x) = (3x - 2)(x + k)$ is 12, $k =$ _____
- (68) If $\sqrt{3 \times 4 \times 15} = r\sqrt{s}$, and s has no perfect
square divisors other than 1, then $r + s =$ _____
- (69) ${}_7C_4 =$ _____
- *(70) 8333 feet = _____ inches
- (71) The line $4x + 3y = C$
has y-intercept 12, its x-intercept is _____
- (72) If $f(x) = 4(x - 3)^2 + 7$,
then its vertex is (h, k) and $h + k =$ _____
- (73) $\left(\frac{7}{5} + \frac{5}{7}\right) \div 2 =$ _____ (mixed number)
- (74) The sum of the infinite geometric
series $15 + 10 + \frac{20}{3} + \dots =$ _____
- (75) How many real roots
does $(x + 3)^2 - 7 = 0$ have? _____
- (76) $\frac{1}{56} + \frac{1}{72} + \frac{1}{90} =$ _____ (fraction)
- (77) If $2x - 3y = 7$ and $4x + y = 7$, then $x =$ _____
- (78) If $f(x) = 2x + 5$, then $\frac{f(13) - f(9)}{13 - 9} =$ _____
- (79) If $8 \times 9 \times 10 \times 11 + 1 = k^2$ and $k > 0$, then $k =$ _____
- *(80) The volume of a sphere with radius 6 is _____

2017-2018 TMSCA Middle School Number Sense Key #10

- | | | | |
|-----------------------|----------------------------|-------------------------|----------------------|
| (1) 344 | (23) 77 | (43) 13 | (63) 35 |
| (2) 184 | (24) $\frac{5}{8}$ or .625 | (44) 13 | (64) 3500000 |
| (3) 869 | (25) 25957 | (45) 9 | (65) - 1 |
| (4) 54 | (26) 5 | (46) $2\frac{1}{2}$ | (66) 216 |
| (5) $\frac{111}{250}$ | (27) 24 | (47) 45 | (67) - 6 |
| (6) 3 | (28) 1300 | (48) 100 | (68) 11 |
| (7) $\frac{31}{35}$ | (29) 81 | (49) 72 | (69) 35 |
| (8) 27 | *(30) 1910 - 2110 | *(50) 625 - 690 | *(70) 94997 - 104995 |
| (9) 40 | (31) 52 | (51) $29\frac{16}{21}$ | |
| *(10) 5852 - 6468 | (32) 84582 | (52) 12 | (71) 9 |
| (11) 3400 | (33) $72\frac{24}{121}$ | (53) $69\frac{1}{16}$ | (72) 10 |
| (12) 3551 | (34) 4410 | (54) 20 | (73) $1\frac{2}{35}$ |
| (13) 901.6 | (35) 693 | (55) 162409 | (74) 45 |
| (14) 126 | (36) 4 | (56) 1 | (75) 2 |
| (15) 2025 | (37) 11 | (57) - 80 | (76) $\frac{3}{70}$ |
| (16) $\frac{1}{8}$ | (38) 400 | (58) $\frac{2}{3}$ | (77) 2 |
| (17) 1536 | (39) $\frac{9}{121}$ | (59) 25 | (78) 2 |
| (18) 1400 | *(40) 78135 - 86359 | *(60) 37962000-41958000 | (79) 89 |
| (19) 132 | (41) - 27 | (61) $\frac{4}{11}$ | |
| *(20) 400828 - 443020 | (42) 169 | (62) 2555 | *(80) 860 - 950 |
| (21) 196 | | | |
| (22) 2890 | | | |