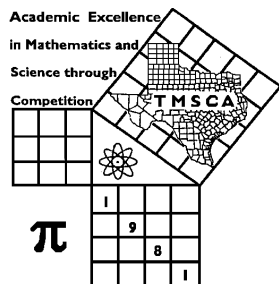


1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	
PLACE LABEL BELOW			
Name: _____		School: _____	
SS/ID Number: _____		City: _____	
Grade:	5 6 7 8	Classification:	1A 2A 3A 4A 5A 6A



**TMSCA MIDDLE SCHOOL
NUMBER SENSE
TEST # 8 ©
JANUARY 23, 2016**

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.

2015-2016 TMSCA Middle School Number Sense Test #8

- (1) $224 \div 4 =$ _____
- (2) $50 \times 26 =$ _____
- (3) $\frac{11}{25} =$ _____ %
- (4) $2016 \times 4 =$ _____
- (5) $11 \times 87 =$ _____
- (6) $0.145 =$ _____ (fraction)
- (7) $12345 \div 9$ has a remainder of _____
- (8) $41 \times (4^2 - 1) \div 3 =$ _____
- (9) $\frac{17}{15} \times 60 =$ _____
- *(10) 62% of 2016 = _____
- (11) $23 \frac{1}{2}\%$ = _____ (fraction)
- (12) $30 \div 2.5 =$ _____
- (13) $81 \times 89 =$ _____
- (14) 8 feet + 4 inches = _____ inches
- (15) $17^2 =$ _____
- (16) $\frac{3}{4} + \frac{2}{5} =$ _____ (improper fraction)
- (17) $14 \times 82 =$ _____
- (18) $32 \times 24 - 8 \times 24 =$ _____
- (19) 490 = _____ (Roman Numeral)
- *(20) $232 \times 799 =$ _____
- (21) $24 \times 4.5 =$ _____
- (22) $97 \times 92 =$ _____
- (23) $66 \times 0.4545\dots =$ _____
- (24) The GCD of 18 and 45 is _____
- (25) The cube root of 343 is _____
- (26) $15 \div 7 + 23 \div 7 + 18 \div 7 =$ _____
- (27) The sum of the first 11 odd positive integers is _____
- (28) The multiplicative inverse of 2.75 is _____ (fraction)
- (29) $103 \times 111 =$ _____
- *(30) $425 \times 475 =$ _____
- (31) The perimeter of an equilateral triangle of side 175 is _____
- (32) The number of positive integral divisors of 50 is _____
- (33) $3.5 \text{ cm}^2 =$ _____ mm^2
- (34) $56 \frac{10}{49} = 7 \frac{5}{7} \times$ _____ (mixed number)
- (35) If $9x + 15 = 63$, then $3x + 5 =$ _____
- (36) If $\frac{9}{x} = \frac{18}{8}$, then $x =$ _____
- (37) $34 \times 46 =$ _____
- (38) $18^2 + 54^2 =$ _____
- (39) If $f(x) = 3x^2 + 4x + 1$, then $f(-2) =$ _____
- *(40) $18^2 \times 11^2 =$ _____
- (41) $1 = \frac{11}{5} \times$ _____ (fraction)
- (42) $13 \times \frac{2}{5} =$ _____ (mixed number)

- (43) Find the area of a rhombus with diagonals of 22 and 17. _____
- (44) $\sqrt{784} =$ _____
- (45) $2 + 4 + 6 + \dots + 22 =$ _____
- (46) If $f(x) = x^2 + 6x + 9$, then $f(12) =$ _____
- (47) The set $\{a,b,c,d,e\}$ has how many subsets? _____
- (48) A regular polygon with 20 sides has an exterior angle of measure _____ degrees
- (49) $444_5 =$ _____₁₀
- *(50) $\sqrt{251 \times 479} =$ _____
- (51) $17 \times \frac{15}{13} =$ _____ (mixed number)
- (52) $19 \times \frac{19}{21} =$ _____ (mixed number)
- (53) In the geometric series ..., w, x, 3, y, z ..., find wxyz. _____
- (54) $(12_5)^2 =$ _____₅
- (55) The circumference of a circle with a radius of 17 is $k\pi$, $k =$ _____
- (56) $425_7 - 256_7 =$ _____₇
- (57) $\sqrt[3]{9261} =$ _____
- (58) $(4^3 + 6^3 + 10^3) \div 3$ has a remainder of _____
- (59) $97^2 =$ _____
- *(60) $559 \times 142857 =$ _____
- (61) If the surface area of a sphere is 324π , then the radius is _____
- (62) $192 \times 125 =$ _____
- (63) If $4^2 + 8^2 + 16^2 = k \times 4^2$, then $k =$ _____
- (64) If $\frac{a}{b} + \frac{b}{a} = 2\frac{9}{40}$, where a and b are relatively prime, then the larger of a and b is _____
- (65) $.345345345\dots =$ _____ (fraction)
- (66) The y-intercept of $f(x) = 3x^2 - 5x + 7$ is _____
- (67) $1^3 + 2^3 + 3^3 + 4^3 + 5^3 + 6^3 + \dots + 9^3 =$ _____
- (68) $127_8 =$ _____₁₀
- (69) $34_6 \div 2_6 =$ _____₆
- *(70) Find the surface area of a rectangular prism with measure 25 by 30 by 35. _____
- (71) If P, Q, and R are roots of $9x^3 + x^2 + 10x - 5 = 0$, then $P + Q + R =$ _____
- (72) If the x-intercepts of $f(x) = x^2 - 8x + 3$ are (p, 0) and (q, 0), then $p + q =$ _____
- (73) Find the probability of rolling a sum of 11 when rolling two 6-sided die. _____
- (74) $305^2 =$ _____
- (75) If $4! \times 5 \times 5! = k^2$ and $k > 0$, then $k =$ _____
- (76) Find the area of a trapezoid with median 18 and height 22. _____
- (77) Find the number of 1-element subsets in the set $\{t, h, r, o, w, s\}$. _____
- (78) If $8^x = 12$ and $5^x = 7$, then $40^x =$ _____
- (79) The sum of the 5th pentagonal number and the 5th triangular number is _____
- *(80) 7400 inches = _____ feet

2015-2016 TMSCA Middle School Number Sense Key #8

- | | | | |
|-----------------------|-----------------------|-------------------------|------------------------|
| (1) 56 | (23) 30 | (43) 187 | (63) 21 |
| (2) 1300 | (24) 9 | (44) 28 | |
| (3) 44 | (25) 7 | (45) 132 | (64) 8 |
| (4) 8064 | (26) 8 | (46) 225 | (65) $\frac{115}{333}$ |
| (5) 957 | (27) 121 | (47) 32 | (66) 7 |
| (6) $\frac{29}{200}$ | | (48) 18 | (67) 2025 |
| (7) 6 | (28) $\frac{4}{11}$ | (49) 124 | (68) 87 |
| (8) 205 | (29) 11433 | *(50) 330 – 364 | (69) 15 |
| (9) 68 | *(30) 191782 – 211968 | (51) $19\frac{8}{13}$ | *(70) 5083 – 5617 |
| *(10) 1188 – 1312 | (31) 525 | (52) $17\frac{4}{21}$ | (71) $-\frac{1}{9}$ |
| (11) $\frac{47}{200}$ | (32) 6 | (53) 81 | (72) 8 |
| (12) 12 | (33) 350 | (54) 144 | (73) $\frac{1}{18}$ |
| (13) 7209 | (34) $7\frac{2}{7}$ | (55) 34 | (74) 93025 |
| (14) 100 | (35) 21 | (56) 136 | (75) 120 |
| (15) 289 | (36) 4 | (57) 21 | (76) 396 |
| (16) $\frac{23}{20}$ | (37) 1564 | (58) 2 | |
| (17) 1148 | (38) 3240 | (59) 9409 | (77) 6 |
| (18) 576 | (39) 5 | *(60) 76864210–83849916 | (78) 84 |
| (19) CDXC | *(40) 37244 – 41164 | (61) 9 | (79) 50 |
| *(20) 176100 – 194636 | (41) $\frac{5}{11}$ | (62) 24000 | *(80) 586 – 647 |
| (21) 108 | (42) $5\frac{1}{5}$ | | |
| (22) 8924 | | | |