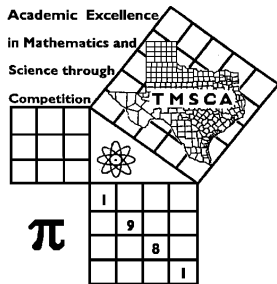


1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	
PLACE LABEL BELOW			
Name: _____		School: _____	
SS/ID Number: _____		City: _____	
Grade: 5	6	7	8
Classification: 1A		2A	3A 4A 5A 6A



**TMSCA MIDDLE SCHOOL
NUMBER SENSE
TEST #11 ©
FEBRUARY 13, 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 #11

- (1) $2016 \times 11 =$ _____
- (2) $39 - 29 + 49 - 39 + 59 =$ _____
- (3) $\frac{11}{40} =$ _____ %
- (4) $63 \times 11 =$ _____
- (5) $1700 \div 20 =$ _____
- (6) $0.125 =$ _____ (fraction)
- (7) $345973 \div 9$ has a remainder of _____
- (8) $24 \times (7^2 - 1) \div 8 =$ _____
- (9) $\frac{19}{13} \times 52 =$ _____
- * (10) $531 - 248 + 722 + 1937 =$ _____
- (11) $11 \frac{1}{3} \% =$ _____ (fraction)
- (12) $60 \div 7.5 =$ _____
- (13) $74 \times 76 =$ _____
- (14) 17 feet = _____ inches
- (15) $23^2 =$ _____
- (16) $\frac{5}{3} + \frac{2}{5} =$ _____ (improper fraction)
- (17) $13 \times 71 =$ _____
- (18) $32 \times 24 + 8 \times 24 =$ _____
- (19) $85^2 =$ _____
- * (20) $167 \times 899 =$ _____
- (21) $26 \times 3.5 =$ _____
- (22) $97 \times 88 =$ _____
- (23) $36 \times 0.777... =$ _____
- (24) The greatest integer that divides both 30 and 45 without a remainder is _____
- (25) The cube root of 64 is _____
- (26) $15 \div 11 + 8 + 18 \div 11 =$ _____
- (27) The sum of the smallest 25 odd whole numbers is _____
- (28) The multiplicative inverse of $\frac{5}{11}$ is _____ (mixed number)
- (29) $107 \times 106 =$ _____
- * (30) $425312 \div 203 =$ _____
- (31) The area of a right triangle with base 18 and height 44 is _____
- (32) $345 \times 111 =$ _____
- (33) $2 \text{ ft}^2 =$ _____ in^2
- (34) $11 \frac{2}{3} \times 11 \frac{1}{3} =$ _____ (mixed number)
- (35) If $x^2 = 121$ and $x < 0$, then $x =$ _____
- (36) The number of positive integral divisors of 22 is _____
- (37) $47 \times 53 =$ _____
- (38) $7^2 + 21^2 =$ _____
- (39) If $x = 2$ and $y = 3$, then $x^2 + 2xy + y^2 =$ _____
- * (40) $199^2 \div 11^2 =$ _____
- (41) If $\frac{3}{x+1} = \frac{1}{4}$, then $x =$ _____
- (42) Find the area of a square with diagonal 12. _____

- (43) $\frac{7}{3} + \frac{3}{7} =$ _____ (mixed number)
- (44) $\sqrt{1024} =$ _____
- (45) $5 + 10 + 15 + \dots + 50 =$ _____
- (46) If $x - y = 16$ and $x + y = 25$, then $x^2 - y^2 =$ _____
- (47) How many proper subsets does the set {a,b,c,d,e} have? _____
- (48) A regular polygon with 9 sides has an exterior angle of measure _____ degrees
- (49) $143_5 =$ _____₁₀
- *(50) $833 \times 479 =$ _____
- (51) $16 \times \frac{15}{13} =$ _____ (mixed number)
- (52) $13 \times \frac{13}{15} =$ _____ (mixed number)
- (53) In the arithmetic series ..., w, x, 3, y, z ..., then $w + x + y + z =$ _____
- (54) Find the area of a triangle with sides of 5, 12, and 13. _____
- (55) Find the smallest positive term in the arithmetic sequence 83, 76, 69, 62, ... is _____
- (56) $525_6 + 253_6 =$ _____₆
- (57) $\sqrt[3]{42875} =$ _____
- (58) $(4^3 + 6^3 + 10^3) \div 5$ has a remainder of _____
- (59) $44 \times 64 =$ _____
- *(60) $315 \times 1428 =$ _____
- (61) If the surface area of a sphere is 900π , then the diameter is _____
- (62) $64 \times 375 =$ _____
- (63) $0.484848\dots =$ _____ (fraction)
- (64) If $\frac{a}{b} + \frac{b}{a} = 2\frac{4}{143}$, where a and b are relatively prime, then the larger of a and b is _____
- (65) $6^2 + 12^2 =$ _____
- (66) The y-intercept of $f(x) = 11 - 2x^2$ is _____
- (67) The x-intercept of $f(x) = 3x - 5$ is _____
- (68) $9^2 + 63^2 =$ _____
- (69) $53_6 \div 3_6 =$ _____₆
- *(70) Find the volume of a rectangular prism with measure 13 by 14 by 15. _____
- (71) If P, Q, and R are roots of $9x^3 + x^2 + 10x - 15 = 0$, then PQR = _____
- (72) The discriminant of $x^2 - 8x + 3 = 0$ is _____
- (73) Find the probability of rolling the same number on each die when rolling two 6-sided die. _____
- (74) $307^2 =$ _____
- (75) $6! + 5 \times 5! =$ _____
- (76) Find the sum of the interior angles of a 20-sided polygon. _____ degrees
- (77) Find the number of 2-element subsets in the set {a,b,c,d,e,f,g}. _____
- (78) If $2^x = 3$ and $5^x = 7$, then $20^x =$ _____
- (79) The sum of the 7th pentagonal number and the 7th triangular number is _____
- *(80) 125 gallons = _____ cubic inches

2015-2016 TMSCA Middle School Number Sense Key #11

- | | | | |
|-----------------------|-----------------------|-----------------------|--------------------------------------|
| (1) 22176 | (23) 28 | (43) $2\frac{16}{21}$ | (62) 24000 |
| (2) 79 | | | (63) $\frac{16}{33}$ |
| (3) 27.5 | (24) 15 | (44) 32 | |
| (4) 693 | (25) 4 | (45) 275 | (64) 13 |
| (5) 85 | (26) 11 | (46) 400 | (65) 180 |
| (6) $\frac{1}{8}$ | (27) 625 | (47) 31 | (66) 11 |
| (7) 4 | | | (67) $\frac{5}{3}$ or $1\frac{2}{3}$ |
| (8) 144 | (28) $2\frac{1}{5}$ | (48) 40 | (68) 4050 |
| (9) 76 | (29) 11342 | (49) 48 | (69) 15 |
| *(10) 2795 – 3089 | *(30) 1991 – 2199 | *(50) 379057 – 418957 | |
| (11) $\frac{17}{50}$ | (31) 396 | (51) $18\frac{6}{13}$ | *(70) 2594 – 2866 |
| (12) 8 | (32) 38295 | (52) $11\frac{4}{15}$ | (71) $\frac{5}{3}$ or $1\frac{2}{3}$ |
| (13) 5624 | (33) 288 | (53) 12 | (72) 52 |
| (14) 204 | (34) $132\frac{2}{9}$ | | (73) $\frac{1}{6}$ |
| (15) 529 | (35) –11 | (54) 30 | (74) 94249 |
| (16) $\frac{31}{15}$ | | (55) 6 | (75) 1320 |
| (17) 923 | (36) 4 | (56) 1222 | (76) 3240 |
| (18) 960 | (37) 2491 | (57) 35 | |
| (19) 7225 | (38) 490 | (58) 0 | (77) 21 |
| *(20) 142627 – 157639 | (39) 25 | (59) 2816 | (78) 63 |
| (21) 91 | *(40) 311 – 343 | *(60) 427329 – 472311 | (79) 98 |
| (22) 8536 | (41) 11 | | |
| | (42) 72 | (61) 30 | *(80) 27432 – 30318 |