

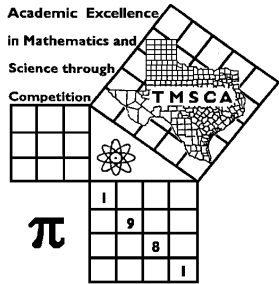
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	Final Score
-----------------------------------	-----------------------------------	-----------------------------------	--------------------

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 # 13 ©
FEBRUARY 27, 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 #13

- (1) $237 + 963 =$ _____
- (2) $2016 \div 5 =$ _____ (decimal)
- (3) $27 \times 11 =$ _____
- (4) $32 \times 12 =$ _____
- (5) $0.075 =$ _____ (fraction)
- (6) $35724 \div 4$ has a remainder of _____
- (7) $3.2 + 3.6 + 4 + 4.4 + 4.8 =$ _____
- (8) $12 \times (3^2 - 1) \div 4 =$ _____
- (9) $\frac{7}{13} \times \frac{5}{14} =$ _____
- *(10) $2347 - 862 + 1123 =$ _____
- (11) $35 \times 24 =$ _____
- (12) $5 \text{ yards} + 2 \text{ feet} =$ _____ feet
- (13) $72 \times 78 =$ _____
- (14) $24 \times 84 =$ _____
- (15) $96 \times 12 \frac{1}{2} =$ _____
- (16) $\frac{5}{7} + \frac{3}{28} =$ _____ (fraction)
- (17) $25^2 =$ _____
- (18) $43 \times 17 + 43 \times 23 =$ _____
- (19) What is the greatest number that divides 12, 18, and 30 without a remainder? _____
- *(20) $333 \times 486 =$ _____
- (21) $55 \div 2.5 =$ _____
- (22) $98 \times 94 =$ _____
- (23) $108 \times 112 =$ _____
- (24) $14 \times 5 \frac{1}{14} =$ _____
- (25) The sum of the smallest 12 positive even integers is _____
- (26) $7832 \div 11$ has a remainder of _____
- (27) $\frac{11!}{8!} =$ _____
- (28) $14 \div 11 - 2 + 41 \div 11 =$ _____
- (29) $53 \times 47 =$ _____
- *(30) $\sqrt{58031} =$ _____
- (31) If two of the angles of a triangle have measure 63° and 47° , then the third angle is _____ $^\circ$
- (32) 26 has how many positive integral divisors? _____
- (33) $90 \frac{6}{25} = 9 \frac{3}{5} \times$ _____ (mixed number)
- (34) If $x + 4 = 13$, then $13x + 52 =$ _____
- (35) $37^2 - 13^2 =$ _____
- (36) If 18 pens cost \$16.50, then a half dozen cost \$ _____
- (37) $\frac{11}{8} + \frac{8}{11} =$ _____ (mixed number)
- (38) $15^2 + 30^2 =$ _____
- (39) If $f(x) = x^2 - 11x + 14$, then $f(9) =$ _____
- *(40) $28^2 + 29^2 + 30^2 + 31^2 + 32^2 =$ _____
- (41) The median of a trapezoid with bases of 14 and 40 is _____
- (42) If $1 + 2 + 3 + \dots + 39 = 20k$, then $k =$ _____

- (43) $15 \times \frac{4}{7} =$ _____ (mixed number)
- (44) Find the perimeter of a regular hexagon with edge 1.25 is _____
- (45) $489 \times 111 =$ _____
- (46) The multiplicative inverse of 4.2 is ____ (fraction)
- (47) The set {h,e,x,a,g,o,n} has how many subsets? _____
- (48) The measure of an exterior angle of a regular 18-sided polygon is _____ °
- (49) $213_7 =$ _____₁₀
- *(50) $833 \times 720 =$ _____
- (51) $4\frac{2}{5} \times 11\frac{2}{5} =$ _____ (mixed number)
- (52) $10 \times \frac{11}{13} =$ _____ (mixed number)
- (53) The slope of a line that has a y-intercept of 4 and passes through (2, 5) is _____
- (54) The area of an equilateral triangle with side 20 is $k\sqrt{3}$, k = _____
- (55) If b, 11, c, forms a geometric sequence, bc = _____
- (56) If $5! + 7! = k \times 5!$, then k = _____
- (57) $25(\text{base } 9) + 87(\text{base } 9) =$ _____ (base 9)
- (58) $2^9 \times 5^5 =$ _____
- (59) $\sqrt{1\frac{9}{16}} =$ _____ (mixed number)
- *(60) $5.5^3 \times 4.5^2 =$ _____
- (61) $.321321\dots =$ _____ (fraction)
- (62) $95 \times 15 =$ _____
- (63) What is the 11th pentagonal number? _____
- (64) If $3^2 + 9^2 + 12^2 = k(3^2)$, then k = _____
- (65) The probability of getting a sum of 4 when rolling a pair of dice is _____
- (66) If $\frac{a}{b} + \frac{b}{a} = 2\frac{25}{176}$, where a and b are relatively prime, then the sum of a and b is _____
- (67) The sum of the positive integral divisors of 12 is _____
- (68) If $3x^2 - 9x - 11 = (ax - p)(bx - q)$, then $abpq =$ _____
- (69) $32_5 \times 2_5 =$ _____₅
- *(70) $\sqrt{443780} =$ _____
- (71) If P, Q and R are roots of $2x^3 - 7x^2 + 5x - 14 = 0$, then $PQR =$ _____
- (72) $2016 \div 7 =$ _____
- (73) $406^2 =$ _____
- (74) If $5^x = 43$, then $5^{x+2} =$ _____
- (75) The line $3x - 2y = C$ contains (7, -2). C = _____
- (76) The distance between the roots of $|x - 7| = 5$ is _____
- (77) If $\sqrt[4]{3x+1} + 2 = 4$, then x = _____
- (78) When the perimeter of a square increases from 16 to 28, the corresponding increase in area is _____
- (79) Find the median of a trapezoid if the area is 42 and the height is 10. _____
- *(80) $5.8 \times 6.2 \times 249 =$ _____

2015-2016 TMSCA Middle School Number Sense Test #13 Key

- | | | | |
|-----------------------|----------------------|---|--|
| (1) 1200 | (23) 12096 | (43) $8\frac{4}{7}$ | (62) 1425 |
| (2) 403.2 | (24) 71 | | (63) 176 |
| (3) 297 | | (44) $7.5, \frac{15}{2},$ or $7\frac{1}{2}$ | (64) 26 |
| (4) 384 | (25) 156 | (45) 54279 | |
| (5) $\frac{3}{40}$ | (26) 0 | (46) $\frac{5}{21}$ | (65) $\frac{1}{12}$ |
| (6) 0 | (27) 990 | | |
| (7) 20 | (28) 3 | (47) 128 | (66) 27 |
| (8) 24 | (29) 2491 | (48) 20 | (67) 28 |
| (9) $\frac{5}{26}$ | *(30) 229 – 252 | (49) 108 | (68) –33 |
| *(10) 2478 – 2738 | (31) 70 | *(50) 569772 – 629748 | (69) 114 |
| (11) 840 | (32) 4 | (51) $50\frac{4}{25}$ | *(70) 633 – 699 |
| (12) 17 | (33) $9\frac{2}{5}$ | (52) $8\frac{6}{13}$ | |
| (13) 5616 | (34) 169 | | (71) 7 |
| (14) 2016 | (35) 1200 | (53) $\frac{1}{2}$ or .5 | (72) 288 |
| (15) 1200 | | | (73) 164836 |
| (16) $\frac{23}{28}$ | (36) 5.50 | (54) 100 | (74) 1075 |
| (17) 625 | (37) $2\frac{9}{88}$ | (55) 121 | (75) 25 |
| (18) 1720 | (38) 1125 | (56) 43 | (76) 10 |
| | (39) –4 | (57) 123 | (77) 5 |
| (19) 6 | *(40) 4285 – 4735 | (58) 1600000 | |
| *(20) 153747 – 169929 | | (59) $1\frac{1}{4}$ | (78) 33 |
| (21) 22 | (41) 27 | | |
| (22) 9212 | (42) 39 | *(60) 3201 – 3537 | (79) $4.2, 4\frac{1}{5}$ or $\frac{21}{5}$ |
| | | (61) $\frac{107}{333}$ | *(80) 8507 – 9401 |