

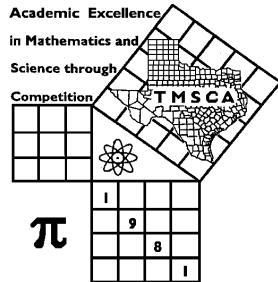
1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	

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 #3 ©

NOVEMBER 5, 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.

2016-2017 TMSCA Middle School Number Sense Test #3

- (1) $134 + 135 + 136 =$ _____
- (2) $41 \times 50 =$ _____
- (3) $6356 \div 7 =$ _____
- (4) $73 \times 11 =$ _____
- (5) $12 \times 11 \times 10 =$ _____
- (6) $43725 \div 9$ has a remainder of _____
- (7) $18 + 22 + 38 + 42 =$ _____
- (8) $4^2 \div (5^2 - 3^2) =$ _____
- (9) $\frac{8}{11} \times \frac{5}{4} =$ _____ (fraction)
- *(10) 79% of 2017 = _____
- (11) $15\frac{1}{3}\%$ = _____ (fraction)
- (12) $16\frac{2}{3} \times 84 =$ _____
- (13) $48 \times 52 =$ _____
- (14) $92 \times 99 =$ _____
- (15) $32^2 =$ _____
- (16) $18 \div 7 - 3 + 17 \div 7 =$ _____
- (17) Which is greater, $\frac{5}{11}$ or $\frac{7}{15}$? _____
- (18) $16 \times 17 + 11 \times 17 + 3 \times 17 =$ _____
- (19) What is the greatest number that divides 16 and 40 with a remainder of 0? _____
- *(20) $624 \times 648 =$ _____
- (21) $2.3 \times 14 =$ _____
- (22) $99 \times 18 =$ _____
- (23) $11118 = 102 \times$ _____
- (24) $17 \times 4\frac{3}{17} =$ _____
- (25) $1 + 3 + 5 + \dots + 41 =$ _____
- (26) There are _____ composite numbers less than 17.
- (27) $4327 \div 11$ has a remainder of _____
- (28) $296 \times 111 =$ _____
- (29) $19^2 + 57^2 =$ _____
- *(30) $\sqrt{43612} =$ _____
- (31) The sum of the complement and supplement of a 70° angle is _____ $^\circ$
- (32) $20\frac{2}{9} = 4\frac{2}{3} \times$ _____ (mixed number)
- (33) 4 feet + 7 inches = _____ inches
- (34) Find the LCM of 21 and 18. _____
- (35) If $14x + 21 = 105$, then $2x + 3 =$ _____
- (36) A rectangle has an area of 64 and width 6, the length is _____
- (37) The diagonal of a rectangle with width 6 and length 8 is _____
- (38) If $x^3 = 64$, then $(x + 1)^2 =$ _____
- (39) If $x = 3$ and $y = 4$, then $x^2 + 2xy + y^2 =$ _____
- *(40) 83.333% of $90^2 =$ _____
- (41) If $\frac{7}{4x-1} = \frac{1}{9}$, then $x =$ _____
- (42) If $1 + 2 + 3 + \dots + 41 = 21k$, then $k =$ _____
- (43) The area of a rhombus with diagonals 42 and 96 is _____

- (44) $0.625 \times 32 =$ _____
- (45) If $3x + 1 = 16$, then $3x(3x + 1) =$ _____
- (46) The sum of the exterior angles of an 18-sided polygon is _____°.
- (47) $43^2 + 26^2 =$ _____
- (48) How many distinct diagonals can be drawn inside an heptagon? _____
- (49) $213_5 =$ _____₁₀
- *(50) $571428 \times 105 =$ _____
- (51) $23 \times \frac{26}{29} =$ _____ (mixed number)
- (52) If $4! + 6! = k \times 4!$, then $k =$ _____
- (53) The area of an equilateral triangle with side 16 is $k\sqrt{3}$. $k =$ _____
- (54) The slope of the line $4x - 3.5y = 11$ is _____
- (55) If $(3^5)^3 \times 9^2 = 3^k$, then $k =$ _____
- (56) The smallest integer solution of $x(x - 2) > 75$ is _____
- (57) $8\sqrt{2} \times 4\sqrt{18} =$ _____
- (58) $(7^3 + 10^3 + 13^3) \div 3$ has a remainder of _____
- (59) If $83^2 = 6889$, then $78 \times 88 =$ _____
- *(60) $(35^3 \div 25^3) \times 1000 =$ _____
- (61) $34_8 \times 3_8 =$ _____₈
- (62) The smaller of the roots of $x^2 - 18x - 40 = 0$ is _____
- (63) $0.2444\dots =$ _____ (fraction)
- (64) $56 \times 625 =$ _____
- (65) $4^2 + 12^2 + 36^2 = 4^2 (k)$. $k =$ _____
- (66) $(24_8)^2 =$ _____₈
- (67) If $\sqrt{20} + \sqrt{5} = \sqrt{x}$, then $x =$ _____
- (68) The probability of obtaining a sum of 10 when rolling a pair of dice is _____
- (69) If $\frac{a}{b} + \frac{b}{a} = 2\frac{25}{84}$ and a and b are relatively prime, then the positive difference of a and b is _____
- *(70) The circumference of a circle with radius 25 is _____
- (71) $\frac{1 + 3 + 5 + \dots + 31}{1 + 3 + 5 + 7} =$ _____
- (72) $P, Q,$ and R are roots of $f(x) = 7x^3 - 343x^2 + 49x - 42$, then $P+Q+R =$ _____
- (73) If $f(x) = 3x^2 - 4x + 1$, then $f(3) =$ _____
- (74) $704^2 =$ _____
- (75) $\frac{1}{20} + \frac{1}{30} + \frac{1}{42} =$ _____ (fraction)
- (76) The larger solution of $|3x - 1| = 19$ is _____
- (77) The discriminant of $4x^2 - 5x - 1 = 0$ is _____
- (78) If $\sqrt[3]{5x+2} = 3$, then $x =$ _____
- (79) If $7x + y = 34$ and $2x + y = 9$, then $x =$ _____
- *(80) 5280 miles = _____ feet

2016-2017 TMSCA Middle School Number Sense Key #3

- | | | | |
|---|--|--------------------------------------|---------------------------------------|
| (1) 405 | (23) 109 | (44) 20 | (64) 35000 |
| (2) 2050 | (24) 71 | (45) 240 | (65) 91 |
| (3) 908 | (25) 441 | | (66) 620 |
| (4) 803 | (26) 9 | (46) 360 | (67) 45 |
| (5) 1320 | (27) 4 | (47) 2525 | |
| (6) 3 | (28) 32856 | (48) 14 | (68) $\frac{1}{12}$ |
| (7) 120 | (29) 3610 | (49) 58 | (69) 5 |
| (8) 1 | *(30) 199 – 219 | *(50) 56999943–62999937 | |
| (9) $\frac{10}{11}$ | (31) 130 | (51) $20\frac{18}{29}$ | *(70) 150 – 164 |
| *(10) 1514 – 1673 | (32) $4\frac{1}{3}$ | (52) 31 | (71) 16 |
| (11) $\frac{23}{150}$ | (33) 55 | (53) 64 | (72) 49 |
| (12) 1400 | (34) 126 | (54) $\frac{8}{7}$ or $1\frac{1}{7}$ | (73) 16 |
| (13) 2496 | (35) 15 | (55) 19 | |
| (14) 9108 | (36) $\frac{32}{3}$ or $10\frac{2}{3}$ | (56) 10 | (74) 495616 |
| (15) 1024 | | (57) 192 | (75) $\frac{3}{28}$ |
| (16) 2 | (37) 10 | (58) 0 | (76) $\frac{20}{3}$ or $6\frac{2}{3}$ |
| (17) $\frac{7}{15}$ | (38) 25 | (59) 6864 | (77) 41 |
| (18) 510 | (39) 49 | *(60) 2607 – 2881 | (78) 5 |
| | *(40) 6413 – 7087 | (61) 124 | (79) 5 |
| (19) 8 | (41) 16 | (62) – 2 | |
| *(20) 384135 – 424569 | (42) 41 | (63) $\frac{11}{45}$ | *(80) 26484480– 29272320 |
| (21) $32.2, \frac{161}{5}; 32\frac{1}{5}$ | (43) 2016 | | |
| (22) 1782 | | | |