

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



**TMSCA MIDDLE SCHOOL
NUMBER SENSE
DISD INVITATIONAL ©
OCTOBER 6, 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.

[illegible]

- (43) If $2x - 11 = 27$, then $x =$ _____
- (44) A set with 5 elements has _____ subsets
- (45) $1 + 3 + 5 + \dots + 31 =$ _____
- (46) The area of a square with diagonal 14 is _____
- (47) $235_9 =$ _____₁₀
- (48) The measure of the exterior angle of an equilateral triangle is _____°
- (49) $23_4 =$ _____₂
- *(50) $\sqrt{575 \times 525} =$ _____
- (51) $23 \times \frac{23}{19} =$ _____ (mixed number)
- (52) The probability of choosing a prime number from the integers between 10 and 20 is _____
- (53) $92^2 - 88^2 =$ _____
- (54) If $f(x) = \sqrt{21x+1}$, then $f(3) =$ _____
- (55) $7 + 10 + 13 + \dots + 43 =$ _____
- (56) If $f(x) = 3x + 19$, then $f(15) - f(5) =$ _____
- (57) The positive geometric mean of 7 and 28 is _____.
- (58) $\frac{5}{11} + \frac{11}{5} =$ _____ (mixed number)
- (59) $64_9 - 15_9 =$ _____₉
- *(60) $98 \times 95 \times 94 =$ _____
- (61) What is the units digits of 98^3 ? _____
- (62) The y-intercept of $f(x) = 4x^2 - 7x - 9$ is _____
- (63) $9\frac{1}{3} \times 9\frac{1}{3} =$ _____ (mixed number)
- (64) $0.727272\dots =$ _____ (fraction)
- (65) $13^2 + 130^2 = 13k$. $k =$ _____
- (66) What is the x coefficient of $(4x^2 + 3x + 5)(2x^2 + 3x + 7)$? _____
- (67) The sum of the infinite geometric series, $3.6 + 1.2 + 0.4 + \dots =$ _____
- (68) What is the 7th pentagonal number? _____
- (69) How many triangles can be drawn using any 3 vertices of a pentagon? _____
- *(70) Find the area of an isosceles right triangle with hypotenuse 84. _____
- (71) The number of positive integral divisors less than 25 that are relatively prime to 25 is _____
- (72) If $2a's = 9b's$ and $3b's = 14c's$, then $1a =$ _____ $c's$
- (73) An 24-sided polygon has how many more distinct diagonals than a 21-sided polygon? _____
- (74) $f(x)$ is a parabola with a vertex of $(3, -4)$ and $g(x) = 5f(x - 4) + 11$. $g(x)$ has a vertex of (h,k) . $k =$ _____
- (75) The point $(7, -3)$ is on the line $5x - 3y = C$, $C =$ _____
- (76) If x is an element of $\{10, 11, 12, 13, \dots, 20\}$, what is the probability that $200 \leq x^2 \leq 300$? _____
- (77) $\frac{(n+5)!}{(n-1)!}$ is a polynomial of degree _____
- (78) If P and Q are the roots of $3x^2 - 5x = 14$, then $PQ - P - Q =$ _____
- (79) The sum of the integral solutions of $|x - 3| \leq 12$ is _____
- *(80) The volume of a cube with side 24 is _____

2018 Dallas ISD Invitational Number Sense Test

(1) $234 + 789 =$ _____

(2) $29 \times 50 =$ _____

(3) $369648 \div 12 =$ _____

(4) $2019 \times 4 =$ _____

(5) $293124 \div 9$ has a remainder of _____

(6) $23 + 24 + 25 + 26 =$ _____

(7) $0.75 =$ _____ (fraction)

(8) $12 \times 2 + 15 - 7 \div 2 =$ _____

(9) $25 \times 60 =$ _____

*(10) $7243 + 314 - 2018 =$ _____

(11) Which of the following is greater $\frac{6}{11}$ or $\frac{13}{22}$? _____

(12) $32 \times 12 \frac{1}{2} =$ _____

(13) $88 \times 82 =$ _____

(14) $33 \frac{1}{3} \times 87 =$ _____

(15) $13^2 =$ _____

(16) The mode of 13, 23, 7, 11, 13 is _____

(17) $44 \times 45 + 56 \times 45 =$ _____

(18) $\frac{5}{9} + \frac{13}{18} =$ _____ (mixed number)

(19) $46 \times 11 =$ _____

*(20) $777.77... \times 721 =$ _____

(21) $75^2 =$ _____

(22) $91 \times 96 =$ _____

(23) $6^3 =$ _____

(24) $12 \times 43 =$ _____

(25) $437 \times 111 =$ _____

(26) The GCD of 16 and 28 is _____

(27) The LCM of 24 and 30 is _____

(28) $42 \times 2 \frac{1}{3} =$ _____

(29) The sum of the prime numbers in the set {13,14,15,16,17,18,19} is _____

*(30) 63% of 4487 = _____

(31) $(23 \times 5) \div 9$ has a remainder of _____

(32) $9^2 + 27^2 =$ _____

(33) $108 \times 109 =$ _____

(34) If 3 spiral notebooks cost \$1.15, then a dozen spiral notebooks cost \$ _____

(35) $24^2 =$ _____

(36) $8 \frac{3}{4} \times 8 \frac{1}{4} =$ _____ (mixed number)

(37) $1 + 2 + 3 + \dots + 10 =$ _____

(38) If the perimeter of a regular nonagon is 189, then what is the length of each side? _____

(39) If 9 and 12 are the legs of a right triangle, then the hypotenuse is _____

*(40) $18 \times 20 \times 22 =$ _____

(41) $\sqrt{1225} =$ _____

(42) 30 has how many positive integral divisors? _____