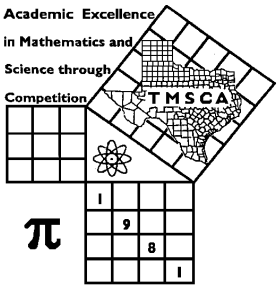
| 1st Score: _____ Grader: _____ | 2nd Score: _____ Grader: _____ | 3rd Score: _____ Grader: _____ | **Final Score** |
|---|---|---|---|

# 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 #8©

## JANUARY 20, 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.

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# 2017-2018 TMSCA Middle School Number Sense Test 8

**(1)** $1015 + 2018 - 3021 =$_____

**(2)** $47 \times 5 =$_____

**(3)** $12 \times 7 + 18 \times 7 =$_____

**(4)** $33 \times 25 =$ _____

**(5)** $4 \times 12.5 \times 12 =$_____

**(6)** $4 - \frac{3}{7} =$_____(mixed number)

**(7)** $\frac{3}{5} + \frac{2}{9} =$_____(fraction)

**(8)** $18\frac{1}{3}\% =$_____ (fraction)

**(9)** $\frac{2}{3}$ of a foot =_____ inches

***(10)** $2018 - 3049 + 8280 =$ _____

**(11)** Which of the following is greater $\frac{2}{3}$ or $\frac{11}{14}$?

_____

**(12)** $15 \div 2.5 =$ _____

**(13)** $27 \times 33 =$_____

**(14)** The median of 1, 16, 25, 9, 4 is_____

**(15)** $37 \times 24 - 13 \times 24 =$_____

**(16)** $29 \div 7 + 4 - 15 \div 7 =$_____

**(17)** $46 \times 66 =$_____

**(18)** $67 \times 63 =$_____

**(19)** The smallest number greater than 50 that has a remainder of 2 when divided by 10 and 15 is____

***(20)** $555 \times 810 =$ _____

**(21)** $16\frac{2}{3}\%$ of 90 is _____

**(22)** $59 \times 13 =$ _____

**(23)** $12^3 =$_____

**(24)** $11 \times 6\frac{7}{11} =$_____

**(25)** $\frac{1}{2} + \frac{3}{2} + \frac{5}{2} + \frac{7}{2} + \ldots + \frac{21}{2} + \frac{23}{2} =$_____

**(26)** The GCF of 20 and 44 is _____

**(27)** There are _____2-digit positive odd integers.

**(28)** $92 \times 111 =$ _____

**(29)** The sum of the prime numbers between 50 and 60 is_____

***(30)** $393^2 \div 3^2 =$_____

**(31)** The supplement of a right angle measures_____°

**(32)** If 6 burgers cost \$15.25, then 2 dozen burgers cost \$ _____

**(33)** The sum of the positive integral divisors of 34 is _____

**(34)** The LCM of 18 and 42 is_____

**(35)** The sum of the numbers that have 5 as a twin prime is_____

**(36)** The mean of the 18 smallest positive odd integers is _____

**(37)** An isosceles trapezoid has bases of 14 and 24 and a height of 12, the two equal sides are _____

**(38)** $8\frac{10}{13} \times 8\frac{3}{13} =$_____(mixed number)

**(39)** If $f(x) = x^2 + 6x + 9$, then $f(17) =$_____

***(40)** 32% of 250 times 599 =_____

**(41)** $\sqrt{2209} =$ _____

**(42)** $\frac{7}{9} + \frac{9}{7} =$_____(mixed number)

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**(43)** Find the area of a trapezoid with bases of 13 and 23 with a height of 18. _____

**(44)** If $f(x) = 2x - 6$, find f(13). _____

**(45)** The perimeter of a regular octagon with edge 14 is _____

**(46)** The sum of the interior and exterior angles of a hexagon is _____°

**(47)** If $32_b = 26$, then b =_____

**(48)** The $7^{th}$ pentagonal number is_____

**(49)** $215_6$ = _____$_{10}$

***(50)** $\sqrt{839 \times 444}$ =_____

**(51)** $16\frac{1}{10} \times 4\frac{1}{10}$ = _____(mixed number)

**(52)** The slope of a line which passes through (4, 2) and (9, 13) is_____

**(53)** If $43^2 - 18^2 = 25k$, then k = _____

**(54)** How many distinct diagonals can be drawn inside a 20-sided polygon? _____

**(55)** If $64 \times 32 = 2^k$, then k = _____

**(56)** If $f(x^2) = 2x + 3$ and $x > 0$, then f(36) = _____

**(57)** $\left(4^3 + 5^3 + 6^3\right) \div 5$ has a remainder of_____

**(58)** If $y + 15 = a(x - 3)$ contains the point (p, q) where p and q are constants, p + q =_____

**(59)** $(1 + 2 + 3 + \ldots + 49) - (1 + 3 + 5 + \ldots + 49)$ = _____

***(60)** The hypotenuse of an isosceles right triangle with legs of 65 and 65 is_____

**(61)** $43_9 \times 4_9$ = _____$_9$

**(62)** If $f(x) = x^2 + 5x$, then f(13) – f(3) = _____

**(63)** $2^4 \times 3^3 \times 5^2$ has how many digits? _____

**(64)** $186 \times 33\frac{1}{3}$ = _____

**(65)** $74^2 + k^2 = 6565$ and $k > 0$, then k =_____

**(66)** The sum of the infinite geometric series, $9 + 3 + 1 + \ldots$ =_____

**(67)** The slope of the line $3x - 9y = 17$ is _____

**(68)** The sum of the $7^{th}$ and $8^{th}$ triangular numbers is_____

**(69)** 0.63333… = _____ (fraction)

***(70)** Find the area of a circle with radius 15. _____

**(71)** The number of positive integral divisors less than 80 that are relatively prime to 80 is_____

**(72)** The sum of coefficients of $(3x + 5)^3$ is_____

**(73)** If $f(x) = 2x^3 - 5x^2 + 3x + 7$, then f(3) = _____

**(74)** If $8^2 + 24^2 + 32^2 = 8^2$ (k), then k =_____

**(75)** The probability of rolling a sum of 3 with two 4-sided die is _____

**(76)** The sum of the solutions of $|3x - 2| = 7$ is _____

**(77)** $\frac{(n+5)!}{(n+2)!}$ is a polynomial of degree_____

**(78)** P, Q, and R are roots of $8x^3 - 7x^2 + 15x + 27 = 0$. The geometric mean of P, Q, and R is _____

**(79)** If $4x + 3y = 17$ and $3x + 2y = 11$, then x + y =____

***(80)** 169 gallon =_____ cubic inches

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# 2017-2018 TMSCA Middle School Number Sense Key #8

**(1) 12**

**(2) 235**

**(3) 210**

**(4) 825**

**(5) 600**

**(6)** $3\frac{4}{7}$

**(7)** $\frac{37}{45}$

**(8)** $\frac{11}{60}$

**(9) 8**

***(10) 6887 – 7611**

**(11)** $\frac{11}{14}$

**(12) 6**

**(13) 891**

**(14) 9**

**(15) 576**

**(16) 6**

**(17) 3036**

**(18) 4221**

**(19) 62**

***(20) 427073 – 472027**

**(21) 15**

**(22) 767**

**(23) 1728**

**(24) 73**

**(25) 72**

**(26) 4**

**(27) 45**

**(28) 10212**

**(29) 112**

***(30) 16303 – 18019**

**(31) 90**

**(32) 61.00**

**(33) 54**

**(34) 126**

**(35) 10**

**(36) 18**

**(37) 13**

**(38)** $72\frac{30}{169}$

**(39) 400**

***(40) 45524 – 50316**

**(41) 47**

**(42)** $2\frac{4}{63}$

**(43) 324**

**(44) 20**

**(45) 112**

**(46) 1080**

**(47) 8**

**(48) 70**

**(49) 83**

***(50) 580 – 640**

**(51)** $66\frac{1}{100}$

**(52) 2.2,** $2\frac{1}{5}$**,** $\frac{11}{5}$

**(53) 61**

**(54) 170**

**(55) 11**

**(56) 15**

**(57) 0**

**(58) – 12**

**(59) 600**

***(60) 88 – 96**

**(61) 183**

**(62) 210**

**(63) 5**

**(64) 6200**

**(65) 33**

**(66) 13.5,** $13\frac{1}{2}$**, or** $\frac{27}{2}$

**(67)** $\frac{1}{3}$

**(68) 64**

**(69)** $\frac{19}{30}$

***(70) 672 – 742**

**(71) 32**

**(72) 512**

**(73) 25**

**(74) 26**

**(75)** $\frac{1}{8}$**, .125**

**(76)** $1\frac{1}{3}$ **or** $\frac{4}{3}$

**(77) 3**

**(78)** $-1.5, -1\frac{1}{2}$**, or** $-\frac{3}{2}$

**(79) 6**

***(80) 37088 – 40990**

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