

[illegible]

2017-2018 TMSCA Middle School Number Sense Test 10

- (1) $273 + 71 =$ _____
- (2) $46 \times 4 =$ _____
- (3) $11 \times 79 =$ _____
- (4) 4.5 feet = _____ inches
- (5) 0.444 = _____ (fraction)
- (6) $7243 \div 8$ has a remainder of _____
- (7) $\frac{3}{5} + \frac{2}{7} =$ _____ (fraction)
- (8) $(4^2 \times 5 + 1) \div 3 =$ _____
- (9) $1\frac{3}{5} \times 25 =$ _____
- *(10) $1823 + 2018 + 2319 =$ _____
- (11) $136 \times 25 =$ _____
- (12) $67 \times 53 =$ _____
- (13) $98 \times 9.2 =$ _____ (decimal)
- (14) The smallest number which both 14 and 18 divide into with a remainder of 0 is _____
- (15) $45^2 =$ _____
- (16) $12\frac{1}{2}\% =$ _____ (fraction)
- (17) $96 \times 16 =$ _____
- (18) $16 \times 87\frac{1}{2} =$ _____
- (19) $2 + 4 + 6 + \dots + 22 =$ _____
- *(20) $626 \times 674 =$ _____
- (21) $(XIV)^2 =$ _____ (Arabic Numeral)
- (22) $85 \times 34 =$ _____
- (23) $6391 = 83 \times$ _____
- (24) The multiplicative inverse of $1\frac{3}{5}$ is _____
- (25) $257 \times 101 =$ _____
- (26) The smallest prime divisor of 305 is _____
- (27) $54 \times 0.444\dots =$ _____
- (28) $38^2 - 12^2 =$ _____
- (29) If a square has perimeter
36 cm, then its area is _____ cm^2
- *(30) $18^2 + 19^2 + 20^2 + 21^2 + 22^2 =$ _____
- (31) The two equal angles of an isosceles triangle
each measure 64° . The other angle is _____ $^\circ$
- (32) $762 \times 111 =$ _____
- (33) $8\frac{3}{11} \times 8\frac{8}{11} =$ _____ (mixed number)
- (34) $21 \times 21 + 63 \times 63 =$ _____
- (35) 3 gallon = _____ cubic inches
- (36) 55 has how many positive integral divisors? _____
- (37) The average of x and x + 6 is 14, x = _____
- (38) If $f(x) = x^2 + 12x + 36$ and $f(14) =$ _____
- (39) $10\frac{3}{11} \times 9\frac{8}{11} = 100 -$ _____ (fraction)
- *(40) $273 \times 144 + 277 \times 155 =$ _____
- (41) If $x < 0$ and $x^4 = 81$, then $x^3 =$ _____
- (42) When the sum of the first 5 positive
odd integers is added to the first
12 positive odd integers, the result is _____

- (43) If $\frac{2x-5}{3} = 7$, then $x =$ _____
- (44) If the area of a square is 84.5,
then the measure of a diagonal is _____
- (45) If $f(x) = \sqrt{5x+6}$, then $f(15) =$ _____
- (46) $\sqrt[3]{\frac{125}{8}} =$ _____ (mixed number)
- (47) A 10-element set has _____ 2-element subsets
- (48) How much greater in measure
is the interior angle of regular
nonagon than its exterior angle? _____ °
- (49) $132_7 =$ _____₁₀
- *(50) $\sqrt{432157} =$ _____
- (51) $25 \times \frac{25}{21} =$ _____ (mixed number)
- (52) The 3rd pentagonal number is _____
- (53) $16\frac{1}{4} \times 4\frac{1}{4} =$ _____ (mixed number)
- (54) A triangle with a largest angle of 100°
has angles in arithmetic progression.
The smallest angle has a measure of _____ °
- (55) $403^2 =$ _____
- (56) $(11)^6 \div 9$ has a remainder of _____
- (57) If $f(x) = 8x + 31$, then $f(4) - f(14) =$ _____
- (58) Find the slope of the line
 $y - 3 = m(x - 5)$ if the line contains (8, 5). _____
- (59) $43_8 - 16_8 =$ _____₈
- *(60) $333 \times 125 \times 960 =$ _____
- (61) $0.363636... =$ _____ (fraction)
- (62) The first 4 decimal places of $\frac{23}{90}$ is 0. _____
- (63) If $x^2 = 15$, then $(2x - 5)(2x + 5) =$ _____
- (64) $2^5 \times 5^6 \times 7 =$ _____
- (65) What is the x coefficient
of $(3x^2 + 2x + 5)(x - 3)$? _____
- (66) The sum of the coefficients of $(4x + 2)^3$ is _____
- (67) The y-intercept
of $f(x) = (3x - 2)(x + k)$ is 12, $k =$ _____
- (68) If $\sqrt{3 \times 4 \times 15} = r\sqrt{s}$, and s has no perfect
square divisors other than 1, then $r + s =$ _____
- (69) ${}_7C_4 =$ _____
- *(70) 8333 feet = _____ inches
- (71) The line $4x + 3y = C$
has y-intercept 12, its x-intercept is _____
- (72) If $f(x) = 4(x - 3)^2 + 7$,
then its vertex is (h, k) and $h + k =$ _____
- (73) $\left(\frac{7}{5} + \frac{5}{7}\right) \div 2 =$ _____ (mixed number)
- (74) The sum of the infinite geometric
series $15 + 10 + \frac{20}{3} + \dots =$ _____
- (75) How many real roots
does $(x + 3)^2 - 7 = 0$ have? _____
- (76) $\frac{1}{56} + \frac{1}{72} + \frac{1}{90} =$ _____ (fraction)
- (77) If $2x - 3y = 7$ and $4x + y = 7$, then $x =$ _____
- (78) If $f(x) = 2x + 5$, then $\frac{f(13) - f(9)}{13 - 9} =$ _____
- (79) If $8 \times 9 \times 10 \times 11 + 1 = k^2$ and $k > 0$, then $k =$ _____
- *(80) The volume of a sphere with radius 6 is _____

2017-2018 TMSCA Middle School Number Sense Key #10

(1) 344	(23) 77	(43) 13	(63) 35
(2) 184	(24) $\frac{5}{8}$ or .625	(44) 13	(64) 3500000
(3) 869	(25) 25957	(45) 9	(65) -1
(4) 54	(26) 5	(46) $2\frac{1}{2}$	(66) 216
(5) $\frac{111}{250}$	(27) 24	(47) 45	
(6) 3	(28) 1300		(67) -6
(7) $\frac{31}{35}$	(29) 81	(48) 100	
(8) 27	*(30) 1910 - 2110	(49) 72	(68) 11
(9) 40		*(50) 625 - 690	(69) 35
*(10) 5852 - 6468	(31) 52		*(70) 94997 - 104995
(11) 3400	(32) 84582	(51) $29\frac{16}{21}$	
(12) 3551	(33) $72\frac{24}{121}$	(52) 12	(71) 9
(13) 901.6	(34) 4410	(53) $69\frac{1}{16}$	
	(35) 693		(72) 10
(14) 126	(36) 4	(54) 20	(73) $1\frac{2}{35}$
(15) 2025	(37) 11	(55) 162409	
(16) $\frac{1}{8}$	(38) 400	(56) 1	(74) 45
(17) 1536	(39) $\frac{9}{121}$	(57) -80	(75) 2
(18) 1400	*(40) 78135 - 86359	(58) $\frac{2}{3}$	(76) $\frac{3}{70}$
(19) 132	(41) -27	(59) 25	(77) 2
*(20) 400828 - 443020		*(60) 37962000-41958000	(78) 2
(21) 196	(42) 169	(61) $\frac{4}{11}$	(79) 89
(22) 2890		(62) 2555	*(80) 860 - 950