

2022-2023 TMSCA Middle School Number Sense Test 3

- (1) $734 + 166 =$ _____
- (2) $135 - 145 =$ _____
- (3) $\frac{3}{4} - \frac{1}{2} =$ _____ (fraction)
- (4) $145\% =$ _____ (mixed number)
- (5) $246 \times 11 =$ _____
- (6) $5266 \div 3$ has a remainder of _____
- (7) $22 + 24 + 26 =$ _____
- (8) $17 \times 14 + 23 \times 14 =$ _____
- (9) $(23)^2 =$ _____
- *(10) $119 + 573 + 202 =$ _____
- (11) $55 \times 45 =$ _____
- (12) $2\frac{2}{9} + 4\frac{2}{7} =$ _____ (mixed number)
- (13) $74 \times 76 =$ _____
- (14) $LX + VII =$ _____ (Arabic numeral)
- (15) $0.325 =$ _____ (fraction)
- (16) $2^2 \times 3^2 \times 5^2 =$ _____
- (17) $5\frac{3}{4} \times 4\frac{3}{5} =$ _____ (mixed number)
- (18) The GCD of 48 and 72 is _____
- (19) $\frac{5}{7} \div \frac{10}{21} =$ _____ (mixed number)
- *(20) $5627 \div 19 =$ _____
- (21) $A = \{1, 3, 6, 10, 15\}$ and $B = \{2, 3, 5, 7, 11\}$.
 $A \cap B$ has how many elements? _____
- (22) $49 \times 25 =$ _____
- (23) $5\frac{7}{9} \times 5\frac{2}{9} =$ _____ (mixed number)
- (24) 1.5 gallons = _____ ounces
- (25) If $7^x = 105$, then $7^{x-1} =$ _____
- (26) $(54)^2 =$ _____
- (27) $14 \times 429 =$ _____
- (28) $\sqrt[3]{2744} =$ _____
- (29) Find the value of k so that the slope of the line $8x - ky = 5$ is 2. $k =$ _____
- *(30) $\sqrt{41212} =$ _____
- (31) A square has _____ diagonals
- (32) If $3^{2x} = 27$, then $x =$ _____
- (33) 25% of 38 is 50% of _____
- (34) If $f(x) = x^2 - 10x + 25$, then $f(29) =$ _____
- (35) $|3 - 10| + |10 - 3| =$ _____
- (36) If Kim has \$11.25 in quarters, then he has _____ quarters
- (37) The number of positive integral divisors of 18 is _____
- (38) $\{1, 1, 2, 3, 5, 8, 13, a, b, c, \dots\}$ $c =$ _____
- (39) If $38^2 - 42^2 = 8k$, then $k =$ _____
- *(40) $41 \times 45 \times 49 =$ _____
- (41) $\frac{7}{8} - \frac{8}{7} =$ _____ (fraction)
- (42) $997 \times 992 =$ _____

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- (43) The volume of a cylinder with diameter = 14 and height = 7 is _____ π
- (44) $111 \times 468 =$ _____
- (45) $\frac{1}{3} + \frac{1}{6} + \frac{1}{10} =$ _____ (fraction)
- (46) $10101 \times 68 =$ _____
- (47) How many integers between 26 and 72 are divisible by 5? _____
- (48) The measure of an exterior angle of a regular octagon is _____ $^\circ$
- (49) $\frac{3}{7}$ of a gallon = _____ cubic inches
- *(50) $\sqrt[3]{105211} =$ _____
- (51) If $(5x + 3)(7x - 4) = ax^2 + bx + c$, then $b =$ _____
- (52) $\frac{8!}{7!4!2!} =$ _____
- (53) The multiplicative inverse of 2.2 is _____
- (54) The sum of the positive factors of 20 is _____
- (55) The area of an isosceles trapezoid with a height of 12 and base lengths of 14 and 16 is _____
- (56) $122^\circ \text{F} =$ _____ $^\circ \text{C}$
- (57) $35853 \div 111 =$ _____
- (58) $1004 \times 1006 =$ _____
- (59) $(314_7)(5_7) =$ _____ $_7$
- *(60) $12^3 \times 511 \div 141 =$ _____
- (61) $14 \times \frac{17}{19} =$ _____ (mixed number)
- (62) The sum of the third pentagonal number and the third triangular number is _____
- (63) $16 \times 18 + 12 =$ _____
- (64) Round $\sqrt{5}$ to the nearest tenth. _____
- (65) $0.0878787\dots =$ _____ (fraction)
- (66) The sum of the positive integers x such that $4x - 4 \leq 20$ is _____
- (67) 48% of $83\frac{1}{3} =$ _____
- (68) $55_6 - 22_6 - 21_6 =$ _____ $_6$
- (69) $(245)^2 =$ _____
- *(70) $36^2 + 104 =$ _____
- (71) The sum of the reciprocals of the first 10 triangular numbers is _____
- (72) $(14 + 16 \times 23 - 2) \div 5$ has a remainder of _____
- (73) If $x = 14$ and $y = 6$, then $x^2 - 2xy + y^2 =$ _____
- (74) The first four digits of the decimal for $\frac{11}{15}$ is 0. _____
- (75) The probability of randomly selecting a king from a standard deck of cards is _____
- (76) The volume of a sphere with a radius of 9 cm is _____ $\pi \text{ cm}^3$
- (77) If the probability that Flour Bluff wins is 0.88, then the odds that Flour Bluff loses are _____ (fraction)
- (78) If P and Q are the roots of $2x^2 - 7x - 9 = 0$, then $PQ + (P + Q) =$ _____
- (79) The sum of the squares of the roots of $2x^2 - 7x - 9 = 0$ is _____
- *(80) The height of an equilateral triangle with a perimeter of 300 cm is _____ cm

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|-----------------------|---------------------------------------|------------------------|---|
| (1) 900 | (22) 1225 | (43) 343 | (63) 300 |
| (2) -10 | (23) $30\frac{14}{81}$ | (44) 51948 | (64) 2.2 |
| (3) $\frac{1}{4}$ | (24) 192 | (45) $\frac{3}{5}$ | (65) $\frac{29}{330}$ |
| (4) $1\frac{9}{20}$ | (25) 15 | (46) 686868 | (66) 21 |
| (5) 2706 | (26) 2916 | (47) 9 | (67) 40 |
| (6) 1 | (27) 6006 | (48) 45 | (68) 12 |
| (7) 72 | (28) 14 | (49) 99 | (69) 60025 |
| (8) 560 | (29) 4 | *(50) 45-49 | *(70) 1330-1470 |
| (9) 529 | *(30) 193-213 | (51) 1 | (71) $1\frac{9}{11}$ or $\frac{20}{11}$ |
| *(10) 850-938 | (31) 2 | (52) $\frac{1}{6}$ | (72) 0 |
| (11) 2475 | (32) $\frac{3}{2}, 1\frac{1}{2}, 1.5$ | (53) $\frac{5}{11}$ | (73) 64 |
| (12) $6\frac{32}{63}$ | (33) 19 | (54) 42 | (74) 7333 |
| (13) 5624 | (34) 576 | (55) 180 | (75) $\frac{1}{13}$ |
| (14) 67 | (35) 14 | (56) 50 | (76) 972 |
| (15) $\frac{13}{40}$ | (36) 45 | (57) 323 | (77) $\frac{3}{22}$ |
| (16) 900 | (37) 6 | (58) 1010024 | (78) -1 |
| (17) $26\frac{9}{20}$ | (38) 55 | (59) 2206 | (79) $\frac{85}{4}, 21\frac{1}{4}, 21.25$ |
| (18) 24 | (39) -40 | *(60) 5950-6575 | (80) 83-90 |
| (19) $1\frac{1}{2}$ | *(40) 85885-94925 | (61) $12\frac{10}{19}$ | |
| *(20) 282-310 | (41) $-\frac{15}{56}$ | (62) 18 | |
| (21) 1 | (42) 989024 | | |