



Number Dojo Middle School Number Sense Test 18.01

Instructions: Use only a PEN (no pencils allowed). Give yourself 10 minutes to complete as many problems as you can, in the order they appear. All problems are to be solved mentally; make **no calculations with calculator or paper and pencil**. Starred *() problems require approximate INTEGRAL answers that are within 5% of the exact answers. Write only the answer in the space provided. **No scratch work, mark-outs, or mark-overs are allowed**. Answers with a \$ require 2 decimal places. You will earn 5 points for every correct answer, less 4 points for every skipped or incorrect answer.

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| (1) $314 - 159 =$ _____ | (21) $103 \times 106 =$ _____ |
| (2) $25 \times 72 =$ _____ | (22) 16 pints = _____ gallons |
| (3) $8 + 6 \div 2 - 4 =$ _____ | (23) The GCF of 56 and 42 is _____ |
| (4) $185 \div 5 =$ _____ | (24) $2\frac{4}{7} \times 7 =$ _____ |
| (5) $0.375 =$ _____ (fraction) | (25) The LCM of 56 and 42 is _____ |
| (6) $2018 \div 3$ has a remainder of _____ | (26) $17 \div 5 + 23 \div 5 =$ _____ |
| (7) $7 \times 6 \times 5 =$ _____ | (27) The largest prime factor of 285 is _____ |
| (8) $\frac{3}{5} + \frac{1}{4} =$ _____ (fraction) | (28) $82 \times 78 =$ _____ |
| (9) $\frac{3}{11} \times 99 =$ _____ | (29) A \$20 book sold at a 30% discount costs \$ _____ |
| * (10) $31415 + 3141 + 314 + 31 + 3 =$ _____ | * (30) $29\pi =$ _____ |
| (11) Which is larger, $\frac{3}{13}$ or $\frac{1}{5}$? _____ | (31) $1 + 3 + 5 + \dots + 19 =$ _____ |
| (12) $17^2 =$ _____ | (32) $5\frac{4}{7} \times 5\frac{3}{7} =$ _____ (mixed number) |
| (13) MMXVIII = _____ (Arabic number) | (33) 2 square yards = _____ square feet |
| (14) $63 \times 67 =$ _____ | (34) The reciprocal of 1.2 is _____ (fraction) |
| (15) $63 \times 43 =$ _____ | (35) $45^2 + 15^2 =$ _____ |
| (16) $3\frac{4}{7}\% =$ _____ (fraction) | (36) $45^2 - 15^2 =$ _____ |
| (17) $18 \times 24 + 26 \times 18 =$ _____ | (37) The sum of the positive integral divisors of 15 is _____ |
| (18) $1 + 2 + 3 + 4 + \dots + 19 =$ _____ | (38) If $x = 3$, then $x^x =$ _____ |
| (19) $12\frac{1}{2} \times 64 =$ _____ | (39) $56 \times 143 =$ _____ |
| * (20) $167 \times 72 =$ _____ | * (40) 63% of 7191 is _____ |

- (41) 15% of 24 = 18% of _____
- (42) The area of a square with diagonal 6 cm is _____ cm^2
- (43) $\frac{4}{7} + \frac{7}{4} =$ _____ (mixed number)
- (44) $7^3 =$ _____
- (45) $\sqrt{2304} =$ _____
- (46) If $f(x) = 3x^2 - 2x$, then $f(4) =$ _____
- (47) A set with 5 elements has _____ subsets
- (48) An exterior angle of nonagon measures _____ $^\circ$
- (49) $36_8 =$ _____₁₀
- *(50) $17 \times 19 \times 21 \times 23 =$ _____
- (51) $13 \times \frac{13}{11} =$ _____ (mixed number)
- (52) $13 \times \frac{11}{9} =$ _____ (mixed number)
- (53) 80% of 60 minus 40 = _____
- (54) The 11th term of the sequence 2, 5, 8, ... is _____
- (55) The slope of the line containing the points (4, 7) and (-2, 1) is _____
- (56) $73^2 + 23^2 =$ _____
- (57) A trapezoid with median 6 and height 7 has area _____
- (58) $9^6 \div 7$ has a remainder of _____
- (59) The 11th triangular number is _____
- *(60) $1428 \times 64 =$ _____
- (61) $0.3555\dots =$ _____ (fraction)
- (62) $10 + 5 + 2.5 + 1.25 + \dots =$ _____
- (63) $2^5 \times 3^2 \times 5^4 =$ _____
- (64) $75 \times 85 =$ _____
- (65) $\frac{3}{7}$ of a gallon = _____ cubic inches
- (66) $\frac{6!+4!}{5!} =$ _____ (mixed number)
- (67) There are _____ positive integers less than 20 that are relatively prime to 20
- (68) ${}_5C_3 =$ _____
- (69) $101 \times 314 =$ _____
- *(70) $\sqrt[3]{8292747} =$ _____
- (71) The sum of the roots of $x^2 + 5x - 7 = 0$ is _____
- (72) The sum of the coefficients of the expansion of $(7x - 2y)^3 =$ _____
- (73) Set $A = \{N, U, M, B, E, R\}$. Set $B = \{S, E, N, s, e\}$. $A \cap B$ has _____ elements.
- (74) $1^3 + 2^3 + 3^3 + 4^3 + 5^3 =$ _____
- (75) The probability of rolling a prime number with a single 6-sided die is _____ (decimal)
- (76) $304 \times 304 =$ _____
- (77) $\frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} =$ _____ (fraction)
- (78) $16^{3/2} =$ _____
- (79) $\log_3 81 =$ _____
- *(80) The month of April has _____ minutes