

**The University Interscholastic League
Number Sense Test, Series 9782**

Final _____
2nd _____
1st _____
Score Initials

Contestant's Number _____

**Read Directions Carefully
Before Beginning Test**

**Do Not Unfold This Sheet
Until Told To Begin**

DIRECTIONS: Do not turn this page until the person conducting this test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. ALL PROBLEMS ARE TO BE SOLVED MENTALLY. Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a (*) require approximate integral answers; any answer to a starred problem that is within five per cent of the exact answer will be scored correct; all other problems require exact answers.

The person conducting this contest should explain these directions to the contestants.

Stop - Wait for Signal!

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| <p>(1) $7521 + 1257 =$ _____</p> <p>(2) $1\frac{3}{4} \times 24 =$ _____</p> <p>(3) $\frac{4}{7} + \frac{7}{4} =$ _____ (mixed number).</p> <p>(4) $62 \times 75 =$ _____</p> <p>(5) $642 \times 9 - 1 =$ _____</p> <p>(6) $211 \div 9 =$ _____ (mixed number).</p> <p>(7) $4557 - 2759 =$ _____</p> <p>(8) $\frac{17}{19} \times 17 =$ _____ (mixed number).</p> <p>(9) $37 \times 17 + 23 \times 17 =$ _____</p> <p>*(10) $23 + 233 + 2333 + 23333 =$ _____</p> <p>(11) Which number is smaller, $.432$ or $\frac{4}{9}$? _____</p> <p>(12) $53^2 =$ _____</p> <p>(13) $122 \div 9$ has a remainder of _____</p> <p>(14) $\frac{7}{8} - \frac{7}{16} + \frac{9}{24} =$ _____</p> <p>(15) The mean of 17, 19 and 24 is _____</p> <p>(16) $.88\% =$ _____ (fraction).</p> <p>(17) $13 \div 6 \times 18 + 3 =$ _____</p> <p>(18) $\frac{5}{12} =$ _____ % (mixed number).</p> | <p>(19) $1 + 3 + 5 + \dots + 17 =$ _____</p> <p>*(20) $119 \times 314 =$ _____</p> <p>(21) Find the LCM of 22 and 26. _____</p> <p>(22) Find the cost of driving a car 89 miles at \$.25 per mile.
\$ _____</p> <p>(23) $16^2 + 32^2 =$ _____</p> <p>(24) Evaluate $F(3)$ if $F(x) = 4x^2 - 4x + 1$. _____</p> <p>(25) If the area of a triangle is 6 times its base, then its height is _____ units.</p> <p>(26) 32% of 70 is 16% of _____</p> <p>(27) How many days are there from June 12, 1998 to Sept. 6, 1998? _____</p> <p>(28) $\frac{1}{16} =$ _____ (decimal).</p> <p>(29) If 4 pens cost \$2.12 then 6 pens cost \$ _____</p> <p>*(30) $6\frac{1}{5} \times 84255 \div 31 =$ _____</p> <p>(31) How many odd integers are between 14 and 46? _____</p> <p>(32) $\frac{6}{11} - \frac{11}{23} =$ _____</p> <p>(33) The GCD of 28, 42 and 91 is _____</p> <p>(34) $63 \times 77 =$ _____</p> <p>(35) $4\frac{1}{4} \times 4\frac{3}{4} =$ _____ (mixed number).</p> |
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- (36) $258 \times 252 =$ _____
- (37) The simple interest on \$120 at 8% for 5 months is \$ _____
- (38) $12423 \div 101 =$ _____
- (39) $(29 \times 7 + 3 \times 4 - 1) \div 6$ has a remainder of _____
- *(40) $78987 \div 339 =$ _____
- (41) $134_6 =$ _____ $10^?$
- (42) If $x - y = 5$ and $2x + y = 16$ then $y =$ _____
- (43) If $x^{3/4} = 8$ then $x =$ _____
- (44) The product of the roots of $2x^2 - 5x = 6$ is _____
- (45) If $3x + 4 = 10$ then $3x - 1 =$ _____
- (46) The smallest integer x such that $3x - 2 > 17$ is _____
- (47) If $3^{x+1} = 6.96$ then $3^x =$ _____
- (48) If $37^2 - 31^2 = 3y$ then $y =$ _____
- (49) If $11^{-1} + x^{-1} = 4^{-1}$ then $x =$ _____
- *(50) $43 \times 42 - 32 \times 41 =$ _____
- (51) The next term of 27, 9, 3, 1, ... is _____
- (52) 51 is what percent less than 60? _____ %
- (53) If $x > y$ are positive integers and $x^2 + y^2 = 29$ then $y =$ _____
- (54) $\log_4 8 + \log_4 2 =$ _____
- (55) If $(3 + 2i)^2 = a + bi$ then $a =$ _____
- (56) If $34_{b+1} = 19$ then $b =$ _____
- (57) Find the smallest whole number greater than 5 that is a factor of 390. _____
- (58) $108 \times 112 =$ _____
- (59) In the expansion $(2x + y)^7$, the coefficient of the third term equals the coefficient of what other term? _____
- *(60) $\sqrt{97344} =$ _____
- (61) If $\csc A = 1.25$ then $\sin A =$ _____
- (62) If a regular polygon of n sides has an interior angle of 168° then $n =$ _____
- (63) Find $F(2)$ if $F(x) = 3 + \cos \pi x$. _____
- (64) If $\ln x = 3$ then $x =$ _____
- (65) How many positive integers less than or equal to 26 are relatively prime to 26? _____
- (66) $\cot \pi/4 =$ _____
- (67) $3 + 7 + 11 + 15 + \dots + 63 =$ _____
- (68) $\sin^{-1}(.5) =$ _____ degrees.
- (69) Five coins are tossed. Find the probability of getting 3 heads and 2 tails. _____
- *(70) $28 \times 29 \times 30 =$ _____
- (71) Change .33, base 4, to a base 8 decimal. _____
- (72) $.069069\dots =$ _____ (fraction).
- (73) Write the first four nonzero digits of the decimal for $\frac{41}{90} \div 0$. _____
- (74) $\det \begin{vmatrix} 2 & 6 \\ 3 & 7 \end{vmatrix} =$ _____
- (75) Let t_n denote the n th triangular number. Find the value of $t_5 - t_4$. _____
- (76) $4^7 \div 9$ has a remainder of _____
- (77) In a 9, 40, 41 right triangle if $\cos A = \frac{40}{41}$ then $\cos 2A =$ _____
- (78) The n th term of 7, 13, 19, 25, ... is _____
- (79) $\int_1^6 x^{-2} dx =$ _____
- *(80) $30 \log_{10} 500 =$ _____