Dr Numsen—High School Number Sense Level: **Medium**

Practice Test—6 October 2005 www.academicmeet.com

1. $2005 \div (20 \div 4) =$ _____.
2. $18 \times 25 =$ _____.
3. $\frac{2}{11} =$ _____ % (mixed number)
4. $2762 \div 7$ has a remainder of _____.
5. $69 \times 52 + 69 \times 28 =$ _____.
6. $3 - 4^2 \times 5 =$ _____.
7. $9 \times 9 \times 10 =$ _____.
8. $704 \div 5 =$ _____ (decimal).
9. Which is smaller: $\frac{8}{9}$ or .885? _____.

(*) 10. $87 + 899 + 585 + 837 - 97 =$ _____.

11. $\frac{3}{5} + \frac{5}{3} - 3 =$ _____.
12. (CCX) × (XXI) = _____ (Arabic numerals).
13. $33 \times 12 =$ _____.
14. $36 + 36 + 26 + 26 + 36 + 26 =$ _____.
15. $109 \times 111 =$ _____.
16. $3\frac{1}{4} - 7\frac{1}{8} =$ _____ (mixed number).
17. How many positive integral divisors does 24 have? _____.
18. $18^2 - 2(18)(3) + 3^2 =$ _____.
19. $\frac{17}{40} =$ _____ % (decimal).

(*) 20. $185447 \div 869 =$ _____.

21. $13 \times \frac{13}{15} =$ _____ (mixed number).
22. $27^2 + 9^2 =$ _____.
23. $\left(6\frac{5}{12}\right)^2 =$ _____ (mixed number).
24. $95 \times 96 =$ _____.
25. If $\frac{3x-4}{5} = 10$, then $x =$ _____.
26. $56 \times 858 =$ _____.
27. If 2 dice cost 78 cents, then 35 dice cost \$ _____.
28. $\frac{1}{8} \times 7\frac{1}{9} =$ _____.
29. $313_5 =$ _____$_{10}$.

(*) 30. $\sqrt{61333} =$ _____.

31. $57 + 54 + 51 + 48 + \ldots + 3 =$ _____.
32. The area of a square is 256. Find the measure of its side. _____.
33. Find the slope of the line whose equation is $8x+y = 6$. _____.
34. The sum of two integers is 10. Find the largest possible product of these two integers. _____.
35. $5 - 4 \div 3 - 2 \times 1 =$ _____.
36. 9 gallons = _____ ounces.
37. The legs of a right triangle are 12 and 5. Find the hypotenuse. _____.
38. $7^2 + 49^2 =$ _____.
39. $131 \times 14 =$ _____.

(*) 40. $529751 \div 928 =$ _____.

41. If r_1 and r_2 are the solutions to the equation $3x^2 = 6 - 5x$, then $r_1 r_2 =$ _____.

42. Find the 13th number in the sequence $\frac{1}{16}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, $\cdots$ _____.

43. $103 \times 106 =$ _____.

44. $.121212\ldots =$ _____ (fraction).

45. The largest integer value of x such that $8x \leq 6x - 17$ is _____.

46. $7\frac{1}{2}$ miles per hour = _____ feet per second.

47. If 32 in base B equals 43 in base 5, then $B =$ _____.

48. $22 \times 24 =$ _____.

49. 18% of $433\frac{1}{3}$ is _____.

(*) 50. $141 \times 25.5 + 939 \times 3 =$ _____.

51. How many positive numbers less than or equal to 62 are relatively prime to 62? _____.

52. $67 \times 63 + 2 =$ _____.

53. 11 ft^2 = _____ in^2.

54. $60^2 + 48^2 - 12^2 =$ _____.

55. $46 \times 42 =$ _____.

56. $\log_9 27 =$ _____.

57. A card is randomly selected from a standard deck of 52 cards. Find the probability that the card is either an Ace or a King. _____.

58. $3 - 1 + \frac{1}{3} - \frac{1}{9} + \ldots =$ _____.

59. The length of the major axis of the ellipse whose equation is $4x^2 + 9(y-1)^2 = 36$ is _____.

(*) 60. $22 \times 42 \times \sqrt{99} =$ _____.

61. ${}_4P_3 =$ _____.

62. $\csc 30° =$ _____.

63. The remainder when $3^{46} \div 4$ is _____.

64. $\sin\left[\cos^{-1}(1)\right] =$ _____.

65. $6000 \div 166\frac{2}{3} =$ _____.

66. $3^4 \times 5^3 \times 2 =$ _____.

67. $\frac{5! \times 7 - 7! \times 5}{4!} =$ _____.

68. $\left|\frac{3-4i}{3+4i}\right| =$ _____.

69. If $\cos 11° = \sin x°$ and $0° \leq x \leq 90°$, then $x =$ _____.

(*) 70. $5.7^3 \times 8.1^3 =$ _____.

71. $\frac{1}{21} + \frac{1}{28} + \frac{1}{36} =$ _____.

72. $\frac{3}{5} - \frac{19}{29} =$ _____.

73. $624^2 =$ _____.

74. If $f(x) = 4x^2 + 9x - 7$, then $f'(-8) =$ _____.

75. $21 \times \frac{21}{25} - 25 =$ _____ (mixed number).

76. The sum of the first 12 terms of the series $3 + 5 + 7 + 9 + \ldots$ is _____.

77. Change $\frac{4}{49}$ to a base 7 decimal. _____.

78. $31^2 - 33^2 + 35^2 - 37^2 =$ _____.

79. $\int_1^9 \frac{1}{4\sqrt{x}}\, dx =$ _____.

(*) 80. $\sqrt[3]{(34567)(76543)} =$ _____.