

## Practice Test—12 October 2005

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1.  $45 \times 25 =$  \_\_\_\_\_.
2.  $1000 - 371 =$  \_\_\_\_\_.
3.  $2005 + 2050 + 2500 =$  \_\_\_\_\_.
4.  $20\% =$  \_\_\_\_\_ (fraction).
5. Find the GCD of 76 and 36. \_\_\_\_\_.
6.  $1314 =$  \_\_\_\_\_ (Roman numeral).
7.  $534 \div 9 =$  \_\_\_\_\_ (mixed number).
8.  $\frac{2}{3} \times \frac{9}{10} =$  \_\_\_\_\_.
9.  $16 \times 14 + 16^2 =$  \_\_\_\_\_.
- (\*) 10.  $22 + 192 + 307 =$  \_\_\_\_\_.
11.  $33 \times 12 =$  \_\_\_\_\_.
12.  $5\frac{5}{7} \times 5\frac{2}{7} =$  \_\_\_\_\_ (mixed number).
13.  $3^0 - 4^2 \div 2 =$  \_\_\_\_\_.
14. 55 gallons = \_\_\_\_\_ quarts.
15.  $\frac{3}{80} =$  \_\_\_\_\_ % (decimal).
16.  $62 \times 26 =$  \_\_\_\_\_.
17.  $108 \times 105 =$  \_\_\_\_\_.
18. Find the sum of the positive integral divisors of 22.  
\_\_\_\_\_.
19.  $98 \times 429 =$  \_\_\_\_\_.
- (\*) 20.  $277042 \div 297 =$  \_\_\_\_\_.
21. Which is larger:  $\frac{16}{19}$  or  $\frac{17}{20}$ ? \_\_\_\_\_.
22.  $41 \times 39 =$  \_\_\_\_\_.
23.  $18^2 + 36^2 =$  \_\_\_\_\_.
24. The cube root of 185193 is \_\_\_\_\_.
25.  $15 \times \frac{15}{13} =$  \_\_\_\_\_ (mixed number).
26.  $1 + 2 + 3 + 4 + \dots + 16 =$  \_\_\_\_\_.
27.  $57 \times 75 =$  \_\_\_\_\_.
28.  $\frac{117}{5^3} =$  \_\_\_\_\_ (decimal).
29.  $\frac{1}{8} - \frac{1}{4} - \frac{1}{2} =$  \_\_\_\_\_.
- (\*) 30.  $\sqrt{291025} =$  \_\_\_\_\_.
31. Solve for  $x$ :  $3(x + 9) = 2(x + 1)$  \_\_\_\_\_.
32.  $.36666\dots =$  \_\_\_\_\_ (fraction).
33. If  $f(x) = -2x^2 - 8x - 8$ , find  $f(5)$ . \_\_\_\_\_.
34.  $2\frac{3}{5}$  hectometers = \_\_\_\_\_ meters.
35. 41 is \_\_\_\_\_ % of 205.
36. A car travels 245 miles in 5 hours. Find its average speed. \_\_\_\_\_ mph.
37.  $1111_5 =$  \_\_\_\_\_<sub>6</sub>.
38.  $113 \times 11 =$  \_\_\_\_\_.
39.  $\text{GCD}(32, 40) - \text{LCM}(32, 40) =$  \_\_\_\_\_.
- (\*) 40.  $12^2 \times 145 =$  \_\_\_\_\_.
41.  $1003 \times 1007 =$  \_\_\_\_\_.
42. Find the distance between the points (2, -6) and (7, 6). \_\_\_\_\_.

## Dr Numsen–High School Number Sense

43.  $59 \times 51 =$  \_\_\_\_\_ .
44.  $6\frac{2}{3}$  yards = \_\_\_\_\_ inches.
45.  $4 + 5 \div 6 - 7 \times 8 =$  \_\_\_\_\_ .
46.  $\frac{3^4 - 3^2}{3^3 - 3^2} =$  \_\_\_\_\_ .
47. The sides of a triangle are 6, 9, and 10. How many obtuse angles does the triangle have? \_\_\_\_\_ .
48. The next term in the sequence 8, 9, 12, 21, 48, ... is \_\_\_\_\_ .
49.  $9500 \div 125 =$  \_\_\_\_\_ .
- (\*) 50.  $26\sqrt{1300} =$  \_\_\_\_\_ .
51.  $94^2 + 25^2 - 69^2 =$  \_\_\_\_\_ .
52.  $46 \times 36 =$  \_\_\_\_\_ .
53.  $16 + 17 \times 18 =$  \_\_\_\_\_ .
54.  $\frac{4}{5}$  of a mile = \_\_\_\_\_ feet.
55. If  $5x - 10 \leq 26 - 4x$ , then  $x \leq$  \_\_\_\_\_ .
56.  $405 \times 75 =$  \_\_\_\_\_ .
57.  $e^{\ln 6} =$  \_\_\_\_\_ .
58. If  $n! = {}_{10}P_3$ , then  $n =$  \_\_\_\_\_ .
59. If  $(9 - 2i)(5 - 8i) = a + bi$ , then  $b =$  \_\_\_\_\_ .
- (\*) 60.  $61 \times 82 \times 52 =$  \_\_\_\_\_ .
61.  $\tan 0^\circ =$  \_\_\_\_\_ .
62. What percent of  $433\frac{1}{3}$  is 26? \_\_\_\_\_ %.
63.  $888 \times \frac{2}{37} =$  \_\_\_\_\_ .
64.  $240^\circ = k\pi$  radians.  $k =$  \_\_\_\_\_ .
65.  $804 \times 796 =$  \_\_\_\_\_ .
66. Find the sum of the coefficients of the binomial expansion of  $(8x + 3y)^4$ . \_\_\_\_\_ .
67.  ${}_8C_2 =$  \_\_\_\_\_ .
68. If  $f(x) = \frac{1}{x-6}$  and  $g(x) = \frac{-5}{x-1}$ , then  $f(g(6)) =$  \_\_\_\_\_ .
69. How many roots does  $y = 2 \sin x$  have on the interval  $[-2\pi, 2\pi]$ ? \_\_\_\_\_ .
- (\*) 70.  $1428 \times 49 =$  \_\_\_\_\_ .
71.  $\cos[\cos^{-1}(-1)] =$  \_\_\_\_\_ .
72.  $\frac{4}{3} - \frac{3}{4} + \frac{5}{4} - \frac{4}{5} =$  \_\_\_\_\_ (mixed number).
73. Change  $\frac{7}{12}$  to a base 6 decimal. \_\_\_\_\_ .
74. If  $3x \equiv 4 \pmod{7}$ ,  $0 \leq x \leq 6$ , then  $x =$  \_\_\_\_\_ .
75. The vertical asymptote of  $f(x) = \frac{3x-2}{5x+8}$  is  $x =$  \_\_\_\_\_ .
76.  $2^4 \times 5^4 \times 3^4 =$  \_\_\_\_\_ .
77.  $(14 + 13)^2 + (14^2 - 13^2) =$  \_\_\_\_\_ .
78. The length of the minor axis of  $8x^2 + 4y^2 = 32$  is \_\_\_\_\_ .
79.  $\int_1^4 \sqrt{x} dx =$  \_\_\_\_\_ .
- (\*) 80.  $28^4 =$  \_\_\_\_\_ .