

1.  $2005 \times 4 =$  \_\_\_\_\_ .
2.  $307 + 509 + 711 =$  \_\_\_\_\_ .
3.  $404 \div 25 =$  \_\_\_\_\_ (decimal).
4.  $72 \times 11 =$  \_\_\_\_\_ .
5.  $\frac{11}{12} =$  \_\_\_\_\_ % (mixed number).
6.  $5 - 9 \times 8 - 3 =$  \_\_\_\_\_ .
7.  $169 \div 5 =$  \_\_\_\_\_ (mixed number).
8.  $13 \times 8 + 9 \times 13 =$  \_\_\_\_\_ .
9.  $24^2 =$  \_\_\_\_\_ .
- (\*) 10.  $706 + 854 + 328 - 691 =$  \_\_\_\_\_ .
11.  $\frac{3}{5} + \frac{1}{3} =$  \_\_\_\_\_ .
12. How many positive integral divisors does 78 have?  
\_\_\_\_\_ .
13.  $5\frac{5}{6} - 2\frac{1}{2} =$  \_\_\_\_\_ (mixed number).
14.  $1 + 3 + 6 + 10 + 15 =$  \_\_\_\_\_ .
15.  $155 \div 3$  has a remainder of \_\_\_\_\_ .
16. Find the GCD of 63, 129, and 87. \_\_\_\_\_ .
17.  $3\frac{1}{4} \times 1\frac{1}{4} =$  \_\_\_\_\_ (mixed number).
18.  $.65 =$  \_\_\_\_\_ (fraction).
19.  $3^2 - 2^2 \times 3 =$  \_\_\_\_\_ .
- (\*) 20.  $15 \times 578 =$  \_\_\_\_\_ .
21.  $45^2 =$  \_\_\_\_\_ .
22.  $56 \times 143 =$  \_\_\_\_\_ .
23. 46 is \_\_\_\_\_ % of 9200.
24.  $94 \times 96 =$  \_\_\_\_\_ .
25. What number multiplied by 6 is the same as the number added to  $-35$ ? \_\_\_\_\_ .
26.  $104 \times 104 =$  \_\_\_\_\_ .
27. 54 inches = \_\_\_\_\_ yards (decimal).
28.  $8 \times 6\frac{1}{4} =$  \_\_\_\_\_ .
29. 64 ounces = \_\_\_\_\_ pints.
- (\*) 30.  $\sqrt{925816} =$  \_\_\_\_\_ .
31.  $\frac{1}{3} - \frac{1}{6} - \frac{1}{12} =$  \_\_\_\_\_ .
32. A calculator costs \$125.00. How much do 32 calculators cost? \$ \_\_\_\_\_ .
33.  $\sqrt[4]{16} =$  \_\_\_\_\_ .
34.  $\frac{23}{5^3} =$  \_\_\_\_\_ (decimal).
35. The hypotenuse of a right triangle is 20. If one leg is  $5\sqrt{7}$ , find the other leg. \_\_\_\_\_ .
36.  $158\frac{1}{3}\% =$  \_\_\_\_\_ (improper fraction).
37.  $64 \times 75 =$  \_\_\_\_\_ .
38.  $7\frac{8}{9} \times 2\frac{8}{9} =$  \_\_\_\_\_ (mixed number).
39.  $2 + 4 + 6 + 8 + \dots + 24 =$  \_\_\_\_\_ .
- (\*) 40.  $482292 \div 792 =$  \_\_\_\_\_ .
41. Find the sum of the roots taken two at a time of  $x^3 + 5x^2 - 6x + 8 = 0$ . \_\_\_\_\_ .
42.  $.67777\dots =$  \_\_\_\_\_ (fraction).
43. Find the 35th number in the sequence 6, 9, 12, 15,  $\dots$  \_\_\_\_\_ .

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44.  $72^2 + 36^2 =$  \_\_\_\_\_ .
45.  $5! =$  \_\_\_\_\_ .
46. The distance between the points  $(0, 1)$  and  $(6, b)$  is 10. Find the largest value for  $b$ . \_\_\_\_\_ .
47. If  $g(x) = 5 - 2x^2$ , then  $g(3) =$  \_\_\_\_\_ .
48. For what value of  $k$  does  $x^2 + 2x + k = 0$  have equal roots? \_\_\_\_\_ .
49.  $\text{GCD}(21, 39) \times \text{LCM}(21, 39) =$  \_\_\_\_\_ .
- (\*) 50.  $52 \times 97 \times 16 =$  \_\_\_\_\_ .
51.  ${}_6P_2 =$  \_\_\_\_\_ .
52.  $66 \times 69 =$  \_\_\_\_\_ .
53. Two similar triangles have perimeters of 16 and 32, respectively. The area of the smaller triangle is 8. Find the area of the larger triangle. \_\_\_\_\_ .
54. If  $\log_x \frac{1}{8} = 3$ , then  $x^2 =$  \_\_\_\_\_ .
55. If  $5x + 14 > 12 - 3x$ , then  $x >$  \_\_\_\_\_ .
56.  $(16^{1/2} + 9^{1/2})^{-3} =$  \_\_\_\_\_ .
57. Find the probability of rolling two fair dice whose sum is 7. \_\_\_\_\_ .
58.  $\tan(45^\circ) =$  \_\_\_\_\_ .
59. If  $(4 - 9i)(3 - 5i) = a + bi$ , then  $a =$  \_\_\_\_\_ .
- (\*) 60.  $4^5 \times 5^4 =$  \_\_\_\_\_ .
61.  $\frac{\ln 9}{\ln 3} =$  \_\_\_\_\_ .
62.  $2 \sin(\pi/12) \cos(\pi/12) =$  \_\_\_\_\_ .
63. If  $\sin(x) = \frac{\sqrt{3}}{2}$  and  $0^\circ \leq x \leq 90^\circ$ , then  $x =$  \_\_\_\_\_ degrees.
64.  $121 \times 31 =$  \_\_\_\_\_ .
65.  $1^3 + 2^3 + 3^3 + \dots + 8^3 =$  \_\_\_\_\_ .
66.  $555 \times \frac{4}{37} =$  \_\_\_\_\_ .
67. The lateral surface area of a cone whose base radius is 3 and whose slant height is 2 is  $k\pi$ , and  $k =$  \_\_\_\_\_ .
68. The next term in the sequence  $1, -\frac{1}{2}, \frac{1}{4}, -\frac{1}{8}, \frac{1}{16}, \dots$  is \_\_\_\_\_ .
69.  $\frac{3}{4} - \frac{16}{19} =$  \_\_\_\_\_ .
- (\*) 70.  $1(2) + 2(3) + 3(4) + \dots + 19(20) =$  \_\_\_\_\_ .
71. If  $f(x) = \frac{-4x - 3}{-8x - 9}$  and  $f^{-1}(x) = \frac{ax + b}{-8x + d}$ , then  $a =$  \_\_\_\_\_ .
72. If  $f(x) = \sqrt{x} - 8$  and  $g(x) = 6x - 8$ , then  $g(f(4)) =$  \_\_\_\_\_ .
73.  $3\frac{1}{5} \times 12\frac{4}{5} =$  \_\_\_\_\_ (mixed number).
74. The minimum value of  $y = 5 - 3 \cos x$  is \_\_\_\_\_ .
75. The third hexagonal number is \_\_\_\_\_ .
76.  $\frac{14}{13} + \frac{13}{14} - 2 =$  \_\_\_\_\_ .
77. Find the smallest multiple of 7 greater than 500. \_\_\_\_\_ .
78.  $\lim_{x \rightarrow 3} \frac{x - 5}{x^2 - 7} =$  \_\_\_\_\_ .
79. The  $y$ -intercept of the tangent line to  $f(x) = x^2 - x$  at  $x = 4$  is \_\_\_\_\_ .
- (\*) 80.  $31111 \times 1333 \div 22222 =$  \_\_\_\_\_ .