

You have 5 minutes to complete this test. Each correct answer earns 1 point and there is no penalty for incorrect answers. If a tie remains, it will not be broken. Write nothing but answers on this sheet of paper; you may use additional paper for scratch work. Good luck, and have fun!

Name/School/Division:

(1) $11 \times 87 =$

(21) $23^2 =$

(2) $2009 \times 5 =$

(22) Which is smaller: $\frac{-10}{13}$ or $\frac{-7}{8}$?

(3) $1 + 2 + 3 + 4 + \dots + 20 =$

(23) $5 + 10 + 15 + 20 + \dots + 50 =$

(4) $101^2 =$

(24) The area of a circle with circumference 4 =

(5) The 7th prime number =

(25) $1234 + 8765 =$

(6) $\sqrt{160801} =$

(26) $173 \times 7 =$

(7) Volume of cube with edge length 2 =

(27) Euler's formula: vertices + faces - edges =

(8) Slope of line through (1, 2) and (3, 3) =

(28) $44_4 + 66_6 = X_{10}$ $X =$

(9) $xy = 1$ $yz = 4$ $zx = 9$ $xyz =$

(29) $1 + 3 + 5 + 7 + \dots + 99 =$

(10) The determinant of $\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} =$

(30) $2 + 4 + 6 + 8 + \dots + 100 =$

(11) $1 - 1 =$

(31) $\frac{65}{7} \div \frac{13}{49} =$

(12) $\frac{12}{54} = \frac{X}{90}$ $X =$

(32) The units digit of 6^{6^6} is

(13) $6.75^2 - 4.75^2 =$

(33) $1337 \times 11 =$

(14) $\frac{8}{15} + \frac{15}{8} =$

(34) $e \heartsuit h = eh + e + h$ $11 \heartsuit 83 =$

(15) $1111^2 =$

(35) (1, 2) is reflected over y -axis to: (,)

(16) Probability of sum of 8 on two dice =

(36) The area of a square with diagonal 4 =

(17) $\frac{1}{2} + \frac{1}{3} + \frac{1}{X} = 1$ $X =$

(37) Distance between $(-2, 3)$ and $(3, -2) =$

(18) 64 is 16% of

(38) $\gcd(a, n) = 1 \Rightarrow a^{\phi(n)} \equiv X \pmod{n}$ $X =$

(19) $\frac{1}{1.2} + \frac{1}{2.3} + \frac{1}{3.4} + \dots + \frac{1}{9.10} =$

(39) $\log_2 3 \cdot \log_3 4 \cdot \log_4 5 \cdot \dots \cdot \log_{63} 64 =$

(20) $\sum_{n=1}^5 \frac{1}{n} =$

(40) $\int_1^e \frac{1}{x} dx =$