

You have 8 minutes to complete this test. Your score is the amount of correct answers you have. Write *ONLY* your answers on this sheet in pen – if there are any signs of changed answers, scratch work, or stray marks, you will be disqualified. Good luck, and have fun!

Name/School/Division: _____

- (1) $1234 + 4321 =$
- (2) $11 \times 72 =$
- (3) 121_{11} in base 10 =
- (4) The units digit of 2002^{2010} is
- (5) $(\sqrt{7} - \sqrt{2})(\sqrt{7} + \sqrt{2})(\sqrt{5} - \sqrt{3})(\sqrt{5} + \sqrt{3}) =$
- (6) Center of $4x^2 + 16x + 9y^2 + 54y + 23 = 0$ is (,)
- (7) Express $0.\overline{12} \times 0.\overline{3}$ as a simplified fraction:
- (8) $76^2 - 36^2 =$
- (9) $(\log_2 3)(\log_3 4)(\log_4 5)(\log_5 6)(\log_6 25) =$
- (10) For $\frac{9-x}{3-x} = 6$, $x =$
- (11) The 13th triangular number is
- (12) For $x = 5$ and $y = 3$, $x^y - y^x =$
- (13) $\gcd(54, 36) =$
- (14) For $|x^2 - 10| = 15$, $|x| =$
- (15) $653 \cdot 50 + 347 \cdot 50 =$
- (16) $1^3 + 2^3 + 3^3 + \dots + 19^3 =$
- (17) Exterior angle of regular decagon =
- (18) Distinct arrangements of *CANADA* =
- (19) The least common multiple of 4, 7, and 10 is
- (20) The number of real solutions to $x^2 + |5x| - 6 = 0$ is
- (21) Area of trapezoid with sides 5, 10, 10, and 17 is
- (22) The remainder when 256 is divided by 7 is
- (23) $|7 + 24i| =$
- (24) The number of positive integral factors of 56 is
- (25) $15 \times 99 =$
- (26) The sum of the prime factors of 2010 is
- (27) Given $x + 2y + z = 3$ and $2x + y + 2z = 6$, $x + y + z =$
- (28) Volume of regular hexahedron with side of 5 =
- (29) $\prod_{x=1}^{2010} (n - 1005) =$
- (30) 21st term of 4, 9, 14, 19,... is
- (31) Number of digits in the product $4^{24} \cdot 5^{45}$ is
- (32) Number of feet in 3 miles =
- (33) Volume of a cone with radius 3 and height 5 =
- (34) Number of ways for 5 friends to sit around a table =
- (35) $4^{16} \equiv x \pmod{17}$ where $0 < x < 17$. $x =$
- (36) $\arcsin(\cos 30^\circ) = x^\circ$. $x =$
- (37) Coefficient of x^2y^3 term in $(x + y)^5$ is
- (38) Number of integral solutions to $|x - 5| < 10$ is
- (39) Number of elements in $\{2, 6, 10, 14, \dots, 62\}$ is
- (40) $1 + 1 =$