2003 Junior High Ciphering–Round 1

1. Calculate $\dfrac{\left[4\left(8-6\right)^2+4\right]\left[3-2\cdot 8\right]}{2^2\left(2^3+5\right)}$.

2. The Punic Wars began in 264 B.C. and ended in 146 B.C. How long did the Punic Wars last?

3. If $f(x)=\sqrt{x^2+2}$, find and simplify $f\left(\sqrt{2}\right)$.

4. What is the circumference of a round pizza with a 12 inch diameter? (Write your answer in terms of π.)

5. What is $66\dfrac{2}{3}\%$ of $\dfrac{27}{10}$? (Write your answer as a fraction in simplest form.)

6. The mean price of 5 items is \$7.00. The prices of the first four items are \$6.50, \$8.00, \$5.50, and \$6.00. How much does the fifth item cost?

7. The area of a triangular-shaped garden is 72 square feet and its height is 24 feet. What is the length of its base?

8. Joshua has twin sisters that are two years younger than him. The sum of their ages (all three!) is twenty-six. How old is Joshua?

Answers–2003 Junior High Ciphering–Round 1

1. -5
2. 118 or 118 years
3. 2
4. 12π
5. $\frac{9}{5}$
6. \$9.00 or \$9 or 9.00 or 9
7. 6 or 6 feet
8. 10

2003 Junior High Ciphering–Round 2

1. Simplify $\dfrac{\frac{2}{3}-1}{\frac{5}{6}-\frac{4}{3}}$. (Write your answer as a fraction in simplest form.)

2. The mean of a set of 7 numbers is 13. What is the sum of the numbers?

3. The perimeter of a square-shaped rug is 36 meters. Find its area.

4. Find the five-digit number in which the first digit is one more than the second, the second is one more than the third, the third is one more than the fourth, and the fourth is one more than the fifth. The sum of the digits is 35.

5. Susan purchased 2 pairs of pants at \$25 each, 4 shirts at \$12 each, 1 dress for \$32, and 1 skirt for \$17. The tax rate on her purchases is 6%. How much did she pay altogether?

6. Point P is at $(-1, 3)$ and point Q is at $(5, 3)$. Which point is halfway between P and Q?

7. A school hallway has a long row of lockers. Every sixth locker contains a package of chewing gum, every eighth locker contains a hockey stick, and every ninth locker contains a mirror. Which is the first locker to contain all three items?

8. Six bars of soap cost \$1.80 and five toothbrushes cost \$6. How much will four bars of soap and 3 toothbrushes cost?

Answers–2003 Junior High Ciphering–Round 2

1. $\frac{2}{3}$
2. 91
3. 81 or 81m^2 or 81 square meters
4. $98,765$
5. \$155.82 or 155.82
6. $(2, 3)$
7. 72
8. \$4.80 or 4.80