

February 20, 2013

Math Bowl

1. Doctor Littledo has snakes and mice. His pets have a total of 35 heads and 60 legs. How many snakes does he have? (Assume mice have 4 legs and snakes have 0 legs)

$$\begin{array}{r} 15 \text{ mice} \\ 4 \overline{) 60} \end{array}$$

$$\begin{array}{r} 35 \text{ heads} \\ - 15 \text{ mice} \\ \hline 20 \text{ snakes} \end{array}$$

20

2. I am a 4-digit number. The sum of my digits is 10. My tens-digit is 2. My ones-digit is $\frac{1}{4}$ of the thousands-digit. What number am I?

$$\begin{array}{cccc} 4 & _ & 2 & 1 \\ & 3 & & \end{array}$$

4321

$$\begin{array}{r} 10 \\ - 7 \\ \hline 3 \end{array}$$

3. Round to hundreds and then do the indicated operations.

$$5927 + 157 - 278$$

$$5900 + 200 - 300$$

5800

4. Evaluate, following the proper order of operations.

$$4 + (5 \times 6) - (4 \div 2)$$

$$4 + 30 - 2 =$$

32

5. Two bacteria are placed in an empty jar, and the number of bacteria doubles every minute. The jar is full at the end of one hour. How many minutes did it take the bacteria to fill half of the jar?

59 minutes

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1. A math class has 6 students, 2 students have a 92% grade average. The other four students have the following grade percentages: 50%, 64.3%, 83%, and 99%. What is the class average? (calculator permitted)

$$\begin{array}{r}
 92 \\
 92 \\
 50 \\
 64.3 \\
 83 \\
 + 99 \\
 \hline
 480.3
 \end{array}$$

$$480.3 \div 6 = 80.05\%$$

2. Frank's basketball team scored 27 points in the first quarter of the basketball game. In the second quarter they scored 21 points, and in the third quarter they scored 28 points. How many points must they score in the fourth quarter to average 28 points per quarter over the whole game?

$$\begin{array}{l}
 3 \text{ Scores} \left\{ \begin{array}{l} 27 \\ 21 \\ 28 \\ \hline 76 \end{array} \right. \\
 \begin{array}{l} 4 \text{ scores} \\ 28 \\ \times 4 \\ \hline 112 \end{array} \\
 \begin{array}{r} 112 \\ - 76 \\ \hline 36 \end{array} \\
 36
 \end{array}$$

3. If $5! = 5 \times 4 \times 3 \times 2 \times 1$ What does $1! + 2! + 3!$ Equal?

$$1 + (2 \times 1) + (3 \times 2 \times 1)$$

$$1 + 2 + 6$$

9

4. Given $2! = 2 \times 1$, $3! = 3 \times 2 \times 1$, etc., evaluate:

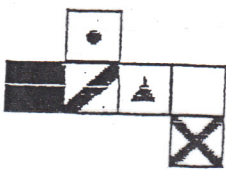
$$\frac{7!}{5!} + \frac{9!}{8!}$$

$$\frac{7 \times 6 \times \cancel{5!}}{5!} + \frac{9 \times \cancel{8!}}{8!}$$

51

$$42 + 9 = 51$$

5. Once the paper is folded into a cube, what cube does it make?



a.)



b.)



c.)



d.)



B