CMC SAMPLE P 7-3

NAME _____

PYTHAGOREAN DIVISION MEET 3 JANUARY 8, 2015 GRADE 7

30 MINUTES

ANSWER COLUMN

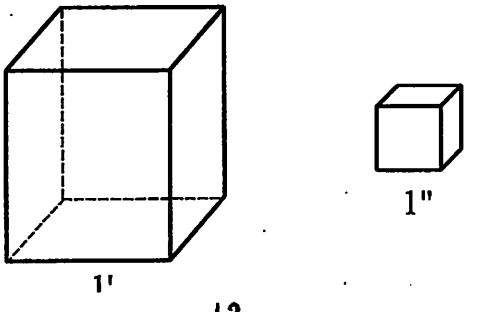
Directions: Place your answer to each question below in the answer column.

1) Find the sum of 19 hundreds and 11 tens. 1) _____

2) $a @ b = \frac{a+b}{a \times b}$ and $a \# b = \frac{a \times b}{a+b}$. If $a \# b = 7\frac{2}{3}$, then, in simplest form, $a @ b =$ _____. 2) _____

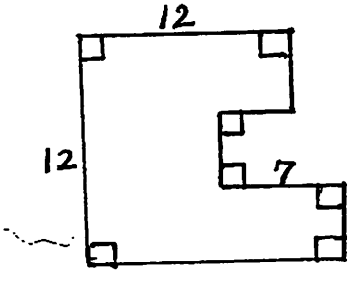
3) On a number line, the point labeled number 10 is twice as far from the point labeled number 6 as it is from the point labeled number 12. There is another point labeled number _____ that is also twice as far from the point labeled number 6 as it is from the point labeled number 12. 3) _____

4) A one-foot cube is to be divided completely into 1" cubes. If all the 1" cubes were to be placed one on top of one another, the stack of 1" cubes would be _____ feet high.



4) _____

5) Find the perimeter of the figure at the right.



5) _____

6) In the multiplication problem at the right, A, B, C, D and E represent different digits. Each time the same letter appears it represents the same digit. Find the number represented by ABCD.

$$\begin{array}{r} ABCD \\ \times \quad 4 \\ \hline EBEA \end{array}$$

6) _____

SAMPLE

CML *PYTHAGOREAN DIVISION MEET 3 JANUARY 8, 2015 SOLUTIONS GRADE 7*

The answer to each question is in parentheses at the beginning of each solution.

1) (2010) $1900 + 110 = 2010$.

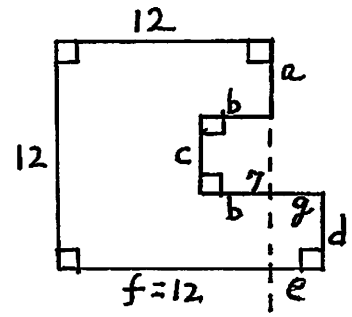
2) ($\frac{3}{23}$) a @ b is the reciprocal of a # b. Since a # $b = 7\frac{2}{3} = \frac{23}{3}$, a @ $b = \frac{3}{23}$.

3) (18) 12 - 6 = 6. Add 6 to 12, getting 18. Now point labeled number 18 is twice as far from point labeled number 6 as it is from point labeled number 12.
18 - 12 = 6; 18 - 6 = 12.

4) (144) There will be 1,728 of the 1" cubes (12 across the front, 12 deep and 12 high. 12 × 12 × 12 = 1,728). 1,728 × 1" = 1,728" = 144 ft. (1,728 ÷ 12).

5) (62) $a + c + d = 12$. $e + b = g + b = 7$. $f = 12$.

$P = 12 + 12 + \underbrace{12}_{a+c+d} + \underbrace{12}_{f} + \underbrace{7}_{g+b} + \underbrace{7}_{b+e} = 62.$



6) (2348)

$$\begin{array}{r} ABCD \\ \times \quad 4 \\ \hline EBEA. \end{array}$$

"A" must equal 1 or 2 or the product would be a 5-digit number. Since D × 4 = _A, "A" must be even. A = 2. D = 3 or 8. E = 8 or 9. Either C × 4 + 1 = E or C × 4 + 3 = E, so E is odd. E = 9. If D = 3, C × 4 + 1 = 9 and C = 2 which cannot happen (C ≠ A). Thus D = 8 and C × 4 + 3 = _9 and C = 4.

$$\begin{array}{r} 2B48 \\ \times \quad 4 \\ \hline 9B92. \end{array}$$

B × 4 + 1 = _B and B = 3. 2348

$$\begin{array}{r} \times \quad 4 \\ \hline 9392 \end{array}$$