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| HAGOREAN DIVISION MEE | T 3 | JANUARY 8, 20 | | GRADE 30 MINUTE |
| ctions: Place your answer to each question be | low in | the answer column. | AN | SWER COLUM |
| The sum of two numbers is 14. One of the number the two numbers. | mbers i | s 9. Find the product | of 1) | |
| 2.10 | $\frac{1}{3}$, then | , in simplest form, | ۵) | |
| $a @ b = \underline{\hspace{1cm}}$ | | | 2) | |
| The figure at the right has 4 rectangles (A, B, C, D) with whole number values for lengths and widths. The areas for A, B and C, in sq. units, are given in the diagram. The area of rectangle D is sq. units. | A D | 55. B 15 C 30 | 3) | |
| multiply to 72 and add to 14. One set of 3 n | umbers | is 6, 6, 2. $(6 \times 6 \times 1)$ | | |
| out and back to Jonesville at 10 m.p.h. for 3 | ½ hour | s? The closest he go | t to | |
| 9¢ stamps and a $5¢$ stamp (18 + 5 = 23). attained by four $9¢$ stamps. What is the large | Thirty- est valu | six ¢ of postage can be of postage that can | be <u>not</u> | |
| | The sum of two numbers is 14. One of the number two numbers. $a @ b = \frac{a+b}{a \times b}$ and $a \# b = \frac{a \times b}{a+b}$. If $a \# b = 7\%$ a @ $b = \frac{a+b}{a \times b}$ and $a \# b = \frac{a \times b}{a+b}$. If $a \# b = 7\%$ a @ $b = \frac{a+b}{a+b}$. The figure at the right has 4 rectangles (A, B, C, D) with whole number values for lengths and widths. The areas for A, B and C, in sq. units, are given in the diagram. The area of rectangle D is sq. units. There are two sets of 3 single-digit numbers (number) is quite to 72 and add to 14. One set of 3 in 72 and (6 + 6 + 2 = 14.) The other set of 3 in Carlos is riding his bike on the road from Jone out and back to Jonesville at 10 m.p.h. for 3 Smithtown was 25 miles away. The distance on that road is miles. Using 5¢ stamps and 9¢ stamps, 23¢ of posta 9¢ stamps and a 5¢ stamp (18 + 5 = 23). attained by four 9¢ stamps. What is the large be attained by using 5¢ and 9¢ stamps? (The | The sum of two numbers is 14. One of the numbers is the two numbers. $a @ b = \frac{a+b}{a \times b}$ and $a \# b = \frac{a \times b}{a+b}$. If $a \# b = 7 \frac{2}{3}$, then $a @ b = \frac{a}{a \times b}$. The figure at the right has 4 rectangles (A, B, C, D) with whole number values for lengths and widths. The areas for A, B and C, in sq. units, are given in the diagram. The area of rectangle D is sq. units. There are two sets of 3 single-digit numbers (not necessary units). There are two sets of 3 single-digit numbers (not necessary units). There are two sets of 3 single-digit numbers (not necessary units). Carlos is riding his bike on the road from Jonesvillet out and back to Jonesville at 10 m.p.h. for 3% hour Smithtown was 25 miles away. The distance from on that road is miles. Using 5% stamps and 9% stamps, 23% of postage can 9% stamps and a 5% stamps (18 + 5 = 23). Thirty-attained by four 9% stamps. What is the largest value be attained by using 5% and 9% stamps? (The value is | Ctions: Place your answer to each question below in the answer column. The sum of two numbers is 14. One of the numbers is 9. Find the product the two numbers. $a @ b = \frac{a+b}{a\times b}$ and $a \# b = \frac{a\times b}{a+b}$. If $a \# b = 7\frac{1}{3}$, then, in simplest form, $a @ b = \frac{a+b}{a\times b}$. The figure at the right has 4 rectangles (A, B, C, D) with whole number values for lengths and widths. The areas for A, B and C, in sq. units, are given in the diagram. The area of rectangle D is $\frac{15}{30}$ sq. units. There are two sets of 3 single-digit numbers (not necessarily all different) the multiply to 72 and add to 14. One set of 3 numbers is 6, 6, 2. 6 × 6 × 72 and $(6+6+2=14)$. The other set of 3 numbers is $\frac{15}{30}$. Carlos is riding his bike on the road from Jonesville to smithtown. He trave out and back to Jonesville at 10 m.p.h. for $\frac{31}{2}$ hours? The closest he got Smithtown was 25 miles away. The distance from Jonesville to Smithtown that road is miles. Using $\frac{5}{2}$ stamps and $\frac{9}{2}$ stamps, $\frac{23}{2}$ of postage can be attained by using the attained by four $\frac{9}{2}$ stamps. What is the largest value of postage that can be attained by using $\frac{5}{2}$ and $\frac{9}{2}$ stamps? (The value is more than $\frac{20}{2}$ but 1 | that a ctions: Place your answer to each question below in the answer column. The sum of two numbers is 14. One of the numbers is 9. Find the product of the two numbers. 1) $a @ b = \frac{a+b}{a\times b}$ and $a \# b = \frac{a\times b}{a+b}$. If $a \# b = 7\frac{2}{3}$, then, in simplest form, $a @ b = $ The figure at the right has 4 rectangles (A, B, C, D) with whole number values for lengths and widths. The areas for A, B and C, in sq. units, are given in the diagram. The area of rectangle D is sq. units. There are two sets of 3 single-digit numbers (not necessarily all different) that multiply to 72 and add to 14. One set of 3 numbers is 6, 6, 2. (6 × 6 × 2 = 72 and (6 + 6 + 2 = 14.) The other set of 3 numbers is without to Smithtown. He travels out and back to Jonesville at 10 m.p.h. for 3½ hours? The closest he got to Smithtown was 25 miles away. The distance from Jonesville to Smithtown on that road is miles. Using 5¢ stamps and 9¢ stamps, 23¢ of postage can be attained by using two 9¢ stamps and a 5¢ stamp (18 + 5 = 23). Thirty-six ¢ of postage can be attained by four 9¢ stamps. What is the largest value of postage that cannot be attained by using 5¢ and 9¢ stamps? (The value is more than 20¢ but less |

PYTHAGOREAN DIVISION MEET 3 JANUARY 8, 2015 SOLUTIONS GRADE 6

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

1)
$$(45)$$
 $14 - 9 = 5$. $9 \times 5 = 45$.

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

While 15 (rectangle B) shares a factor of 5 with both rectangle A and rectangle C, it does not share a factor of 3 with rectangle A, thus, A is 5×11, B is 5×3, C is 3×10 and D is 10×11. 10 × 11 = 110 sq. units. (Even if B is 1×15, then A is 1×55 = 55, C is 15×2 = 30 and D is 55×2 = 110.)

| Α | 55 | 5 | B 15 |
|---|-----|----|---------|
| D | 11 | | C 3 |
| | 110 | 10 | 30 |

- 4) (8, 3, 3) When 72 is written in terms of its prime factors $(2 \times 2 \times 2 \times 3 \times 3)$, both $6 \times 6 \times 2$ and $8 \times 3 \times 3$ can be determined. $8 \times 3 \times 3 = 72$ and 8 + 3 + 3 = 14.
- He traveled a total of 35 miles (3 $\frac{1}{2}$ hours at 10 m.p.h.). He traveled 17 $\frac{1}{2}$ miles out and 17 $\frac{1}{2}$ miles back. At 17 $\frac{1}{2}$ miles out he was still 25 miles from Smithtown. 17 $\frac{1}{2}$ + 25 = 42 $\frac{1}{2}$ miles.
- Thirty cents can be attained (six 5¢ stamps). The cannot be attained. 32¢ by three 9¢ + one <math>5¢ (27 + 5 = 32). 33¢ by two 9¢ + three <math>5¢ (18 + 15 = 33). 34¢ by one 9¢ and five 5¢ (9 + 25 = 34). 35¢ by using seven 5¢. 36¢ by using four 9¢. Once 5 values in a row can be attained (32 36), then the next 5 values can be attained by adding a 5¢ stamp. All values over 31¢ can be attained. The largest value unattainable is 31¢.