

NAME \_\_\_\_\_

EUCLIDEAN DIVISION

MEET 1

NOVEMBER 6, 2014

GRADE 7

30 MINUTES

ANSWER COLUMN

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

- 1) What 3-digit palindrome has digits that add to 7 and whose product of the digits is as large as possible? (A palindrome is a number that reads the same forward or backward. 797, 8668, 444 are examples of palindromes.)

1) \_\_\_\_\_

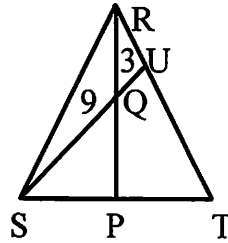
- 2) If  $k \cdot \frac{5}{9} = \frac{1}{6} \cdot \frac{2}{3}$ , find  $k$  in simplest form.

2) \_\_\_\_\_

- 3) Ishmael made a long jump that was 4 ft.  $9\frac{3}{4}$  in. further than Juwan's long jump. Together, they jumped a total distance of 39 ft.  $6\frac{3}{4}$  in. In simplest form, Ishmael's long jump was \_\_\_\_\_ ft. \_\_\_\_\_ in.

3) \_\_\_\_\_

- 4) The area of  $\triangle SRP$  equals  $\frac{1}{2}$  the area of  $\triangle RST$ .  
The area of  $\triangle RUS$  equals  $\frac{1}{3}$  the area of  $\triangle RST$ .  
The area of  $\triangle RSQ = 9$  sq. units. The area of  $\triangle RUQ = 3$  sq. units. The area of quadrilateral PQUT = \_\_\_\_\_ sq. units.

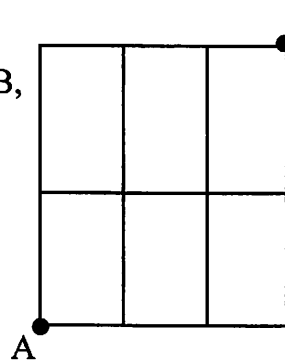


4) \_\_\_\_\_

- 5) Sara took a history test and her grade for the test was exactly 75%. On the 1<sup>st</sup> 25 questions she answered 80% correctly. On the remaining questions she had 7 wrong answers and \_\_\_\_\_ correct answers.

5) \_\_\_\_\_

- 6) How many different routes are there from Point A to Point B, if the movement must be to the right or up?



6) \_\_\_\_\_

E 7-1

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

1) (232) Three digit palindromes adding to 7 would be 151, 232 and 313. The middle digit must be odd since the other two are the same and their sum is even.  
 $1 \times 5 \times 1 = 5$ ;  $2 \times 3 \times 2 = 12$ ;  $3 \times 1 \times 3 = 9$ . Twelve is the largest product.  
 232 satisfies the criteria.

2) ( $\frac{1}{5}$ )  $k \cdot \frac{5}{9} = \frac{1}{6} \cdot \frac{2}{3} = \frac{1}{9}$ .  $k = \frac{1}{5}$ .

3) (22 ft. 2  $\frac{1}{4}$  in.) If Juwan had jumped as far as Ishmael, together they would have jumped  
 $39 \text{ ft. } 6 \frac{3}{4} \text{ in.}$   
 $+ \quad 4 \text{ ft. } 9 \frac{3}{4} \text{ in.}$ 

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 $43 \text{ ft. } 16 \frac{1}{2} \text{ in.}$   
 $43 \text{ ft. } 16 \frac{1}{2} \text{ in.} = 44 \text{ ft. } 4 \frac{1}{2} \text{ in.}$   $44 \text{ ft. } 4 \frac{1}{2} \text{ in.} \div 2 = 22 \text{ ft. } 2 \frac{1}{4} \text{ in.}$   
 (Juwan actually jumped 17 ft. 4  $\frac{1}{2}$  in.)

4) (15) The area of  $\triangle RUS = 12$  sq. units. Thus, the area of  $\triangle RST = 36$  sq. units.  
 Since the area of  $\triangle SRP = \frac{1}{2}$  the area of  $\triangle RST$ , the area of  $\triangle RPT$  equals the other half of the area of  $\triangle RST$ . Since the area of  $\triangle RPT = 18$  sq. units and the area of  $\triangle RUQ = 3$  sq. units, the area of quadrilateral PQUT =  $18 - 3 = 15$  sq. units.

5) (16) 75% means she answered  $\frac{3}{4}$  of the questions correctly. On the 1<sup>st</sup> 25 questions she had 20 correct answers ( $\frac{4}{5} = 80\%$ ) and 5 wrong answers. With 7 more wrong answers, 12 wrong answers represents  $\frac{1}{4}$  of the total number of questions (she had  $\frac{3}{4}$  correct). There were 48 questions on the test and on the remaining 23 questions ( $48 - 25$ ) she had 7 wrong answers and 16 correct answers. ( $20 + 16 = 36$  correct out of  $48 = 75\%$ .)

6) (10) A point that can be reached from 2 other points, by going to the right or up, adds the numbers of those points. A point reachable from only one point keeps the same number.

