9. Area of a Triangle: Answer Key

RECAP 1: Grouping Words

Split the 49 words into groups and make 4 true statements discussed in this lesson. Use all given clues. **(40 pts)**

adjacent angle. a any any area area area base by calculated half half height. hypotenuse is is is is legs. of of of of of of opposite product product rectangle right right sides. taking times triangle triangle two two The The The The the the the the the the

(Variations of the sentences are possible!)

1. The area of a rectangle is the product of two adjacent sides. **(10 pts)**
2. The area of any right triangle is half the product of the two legs. **(10 pts)**
3. The area of any triangle is calculated by taking half of the base times the height. **(10 pts)**
4. The hypotenuse is opposite the right angle. **(10 pts)**

RECAP 2: New Vocabulary and Ideas

Check ALL correct answers. Explain your choice and provide details.

(16 pts total)

1. The *foot* of an altitude in a triangle:
   - (I.) Is where a perpendicular and a side of the triangle intersect.
   - II. Is the foot of a hill.
   - III. Is the intersection of the *diagonals* of a in a rectangle.
   - IV. Is the intersection of the altitudes in a triangle.
   - (V.) Is a point on the side of a triangle.
   - (VI.) Looks like the heel of your foot when you stand up.
2. The *area of a right* triangle:
   - I. Cannot be calculated unless you know the hypotenuse of the triangle.
   - (II.) Is half of the area of a suitable rectangle.
   - III. Was first calculated by Aryabhata.
   - (IV.) Is the product of two adjacent sides of the triangle, divided by 2.
   - (V.) Has only two distinct formulas that use the altitudes and sides of the triangle.
   - (VI.) More than 50% of the above are true.
3. In *standard* notation:
   - I. The *feet* of the altitudes are denoted by h_a, h_b, and h_c.
   - II. The vertices of the triangle are denoted by lower-case letters.
   - III. The sides of the triangle are denoted by upper-case letters.
   - (IV.) The altitudes have a special notation that uses the side which is perpendicular to the altitude.