1. One force of 20 pounds and one force of 15 pounds act on a body at the same point so that the resultant force is 19 pounds. Find, to the *nearest degree*, the angle between the two original forces.

1. _____

2. A glider is moving forward at a speed of 12 miles per hour while air currents are working against the glider at a force of 8 miles per hour. The resultant speed of the glider is 10.2 miles per hour.
   a) To the *nearest hundredth of a degree*, at what angle is the air current acting on the glider?
   b) Find the measure of the angle between the air current and the resultant to the *nearest tenth of a degree*.

2. _____

3. If the coordinates of point A are (–2, 3), what is the image of A under $r_{y-\text{axis}} \circ D_3$?
(1) (–6, –9) (3) (5, 6)
(2) (9, –6) (4) (6, 9)

4. In $\triangle VAL$, $v = 13.12$, $a = 11.3$, and $m\angle A = 44.5$. The triangle must be which of the following?
(1) cannot be determined
(2) obtuse
(3) isosceles
(4) right

3. _____

4. _____

5. A surveyor is reviewing the property deed to Evelyn's triangular piece of land in Lucifer County. According to the old deed, the property has sides that measure 112 feet, 120 feet, and 96 feet, with the largest angle of the property equal to 69.98º and the smallest angle between sides of the property equal to 43.74º. If the surveyor finds the lengths of the sides of the property accurate, will she also find the angle measurements valid? Explain why or why not.

5.

6. Jim is experimenting with a new drawing program on his computer. He created quadrilateral *TEAM* with coordinates $T(-2,3)$, $E(-5,-4)$, $A(2,-1)$, and $M(5,6)$. Jim believes that he has created a rhombus but not a square. Prove that Jim is correct. [The use of the grid below is optional.]