Name: _____ M$6 Homework 39

1. Two tow trucks try to pull a car out of a ditch. One tow truck applies a force of 1,500 pounds while the other truck applies a force of 2,000 pounds. The resultant force is 3,000 pounds. Find the angle between the two applied forces, rounded to the *nearest degree*.

1. _____

2. Two forces of 50 pounds and 68 pounds act on a body to produce a resultant force of 70 pounds. Find, to the *nearest tenth of a degree*, the angle formed between the resultant force and the smaller force.

2. _____

3. A surveyor is mapping a triangular plot of land. He measures two of the sides and the angle formed by these two sides and finds that the lengths are 400 yards and 200 yards and the included angle is 50º.
   What is the measure of the third side of the plot of land, to the *nearest yard*?
   What is the area of this plot of land, to the *nearest square yard*?

3. _____

4. For what value of x does $\log(36 - x^3) = 2$?

(1) –8 (3) –4
(2) 8 (4) 4

4.

5. In the interval $0 < \theta \leq 2\pi$, the number of solutions of the equation $\sin\theta - \cos\theta = 0$ is

(1) 1 (3) 3
(2) 2 (4) 4

5.

6. Solve algebraically: $\sqrt{x+4} + \sqrt{1-x} = 3$

6.

7. An architect commissions a contractor to produce a triangular window. The architect describes the window as $\triangle ABC$, where $m\angle A = 50$, $BC = 10$ inches, and $AB = 12$ inches. How many distinct triangles can the contractor construct using these dimensions?

(1) 1 (2) 2 (3) 0 (4) more than 2

7.

8. Find, to the *nearest tenth of a degree*, all values of x in the interval $0° \leq x < 360°$ that satisfy the equation $\frac{3\sin x}{6\sin x - 1} = \frac{\csc x}{3}$.

8.