

Name: \_\_\_\_\_

**Law of Sines**

- 1) Solve each of the following triangles ABC:
  - 1)  $a = 125, A = 54^\circ 40', B = 65^\circ 10'$
  - 2)  $b = 215, c = 150, B = 42^\circ 40'$
  - 3)  $b = 321, A = 75^\circ 20', C = 38^\circ 30'$
  - 4)  $b = 40.2, a = 31.5, B = 112^\circ 20'$
  - 5)  $b = 51.5, a = 62.5, B = 40^\circ 40'$
- 2) Is it possible to have a triangle with the following dimensions? If yes, solve for the missing sides and angles of the triangle; if no, explain why not.
  - 1)  $A = 122^\circ, C = 18^\circ, c = 21\text{cm}$
  - 2)  $A = 46.5^\circ, a = 7.9\text{ cm}, b = 13.1\text{cm}$
  - 3)  $B = 112^\circ, C = 19^\circ, c = 23\text{ cm}$
- 3) Find, if possible, the missing sides and angles in each of the three triangles whose measurements are given below:
  - 1) Triangle ABC in which  $\angle A = 78^\circ, \angle B = 65^\circ$  and  $AB = 5\text{ cm}$
  - 2) Triangle ABC in which  $\angle C = 33^\circ, BC = 6\text{ cm}$  and  $AB = 4\text{ cm}$
  - 3) Triangle ABC in which  $\angle C = 40^\circ, AB = 9\text{ cm}$  and  $BC = 5\text{ cm}$
- 4) Solve the triangle when  $a = 12, b = 31, A = 20.5$
- 5) In  $\triangle HEY, \angle H = 125^\circ$  and  $h = \frac{5}{4}y$ . Find the measures of  $\angle E$  and  $\angle Y$
- 6) In  $\triangle FUN, \angle F = 100^\circ$  and  $u = \frac{2}{3}f$ . Find the measures of  $\angle U$  and  $\angle N$ .