Trigonometry Worksheet 7 - Answers

For questions 1-6, find the area of the given triangle to the nearest whole square unit.

1. $\triangle MNO$ has adjacent sides with length 12 and 17 and an included angle of 41°.
   70 unit^2

2. $\triangle JKL$ has adjacent sides with length 19 and 22 and an included angle of 18°.
   59 unit^2

3. $\triangle ABC$ has adjacent sides with length 19 and 22 and an included angle of 135°.
   148 units^2

4. $\triangle DEF$ has adjacent sides of length 40 and 30 and an included angle of 105°.
   580 unit^2

5. $\triangle GHI$ has adjacent sides of length 14 and 16 and an included angle of 60°.
   97 unit^2

6. $\triangle JKL$is an isosceles right triangle with hypotenuse $\sqrt{128}$.
   32 unit^2

7. $\triangle DEF$ has adjacent sides of lengths 10 and 10 and an angle of 60° that is not included. What is the area of the triangle?
   $25\sqrt{3} \approx 43.3$ units^2.

8. A K'nex enthusiast constructs a triangle using three metal plates. Two of them have lengths 15 and 18 units and the angle between these two plates is 78°. To the nearest square unit, what is the area of the triangle?
   132 unit^2

9. A canvas sail is in the shape of a triangle with sides 9 feet, 11 feet, and 14 feet long. To the nearest tenth of a square foot, what is the area of the sail? (Hint: use the Law of Cosines, $c^2 = a^2 + b^2 2ab\cos C$.)
   49.5 ft^2.

10. Authorities with the EPA are calculating the area of the river delta. The delta measures 16 miles, 12 miles, and 10 miles on its sides. To the nearest hundredth of a square mile, what is the area of the delta?(Hint: use the Law of Cosines, $c^2 = a^2 + b^2 2ab\cos C$.)
    59.92 mi^2.
