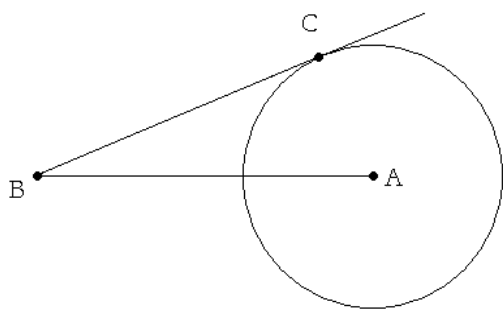


Problem Set 1

1. One angle of a triangle measures 35° . The difference between the other two angles is 15° . Find the angles of the triangle.
2. Use the triangle inequality to decide which of the following number triples define three sides of a triangle.
 - (a) 2, 3, and 3
 - (b) 7, 8, and 15
 - (c) 2, 9, and 17
3. The number triples below are sides of triangles. Which of the triangles has a right angle? Which angle is 90° , α , β , or γ ?
 - (a) $a = 7$ in, $b = 25$ in, and $c = 24$ in.
 - (b) $a = 6$ m, $b = 8$ m, and $c = 9$ m.
 - (c) $a = 13$ cm, $b = 5$ cm, and $c = 12$ cm.
4. Find the length of the diagonal of the unit square. (A unit square is a square with sides 1.) Express your answer
 - (a) as the exact value
 - (b) as an approximation, rounded to 3 decimal places
5. Two sides of a right triangle are 6 yd and 8 yd long. Find the third side.
6. Find the length of the height of the regular triangle with sides 2 m long. Express your answer
 - (a) as the exact value.
 - (b) as an approximation, rounded to 3 decimal places.
7. The distance between points A and B is 26. A is the center of a circle with radius 10. We draw a tangent line from B to the circle. Label the intersection of the circle and its tangent line as C . (See the picture below.) Find the distance between B and C .



8. Find the distance between the points $(-1, -5)$ and $(-4, -1)$.