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

**April 11th, 2013**

**Geometry, Mrs. Sulkes and Mr. Lefebvre**

**9:7 Quadratics in Circles**

1. An angle is inscribed in a major arc of a circle and the measure of the major arc equals the square of the measure of the inscribed angle. Find the measure of the inscribed angle .

2. A right triangle is inscribed in a circle of radius 2 in. If the legs of the triangle have lengths of

*x* and  *x* + 3, find *x.*



3. A point P is outside a circle and is 13 inches from the center. A secant from P cuts the circle at Q and R so that the external segment of secant PQ is 9 inches and QR is 7 inches. Find the radius of the circle. Draw the diagram and label it as part of your solution.

4. Use the diagram below to solve for x and to fill in the table of the missing lengths of the given line segments. Each row in the table is a separate problem.



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | AE | ED | CE | EB | CB |
| a) | 6 | 3 | 2 | x |  |
| b) | 8 | x |  | 4 | 10 |
| c) | x | 2x-1 | 1 | 3 |  |
| d) | x | x+2 | 2 |  | 12 |

5. Use the diagram below to solve for *x* and to fill in the table of the missing lengths of the given line segments.

Given  is tangent to the circle at *A.*



D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | AB | DB | CB | CD |
| a) | x |  | 2 | 6 |
| b) | x+3 | 12 | 3 |  |
| c) | 6 |  | x | x – 1 |
| d) | 5 | x+4 | x |  |

6. Use the diagram below to fill in the table of the missing lengths of the given line segments.



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | AB | AD | DB | CB | CE | EB |
| a) | 10 |  | 4 | x |  | 5 |
| b) | 10 |  | x | 5 | 1 |  |
| c) | x+5 |  | x+1 |  | 8 | 2 |
| d) |  | 19 | 5 |  | 7 | x |