**Sine Rule, Cosine Rule and Area Rule**

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| **1)** Find the value of  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_1.png | [1]   |
| **2)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_2.png | [1]   |
| **3)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_3.png | [1]   |
| **4)** Find  $x$ in the triangle below, rounding your answer to 1 decimal place.      http://www.mathster.com/course/simgs/14683250910_4.png | [1]   |
| **5)** Find the size of angle  $x$, giving your answer to 1 decimal place.      http://www.mathster.com/course/simgs/14683250910_5.png | [1]   |
| **6)** The path of a satellite orbiting the earth causes it to pass directly over two tracking stations A and B, which are 60 km apart. When the satellite is on one side of the two stations, the angles of elevation at A and B are measured to be 86.4 ° and 85 °, respectively.Find how far the satellite is from station A and how high the satellite is above the ground. Round your answers to 2 decimal places.       | [1]   |
| **7)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_6.png | [1]   |
| **8)** Find the value of  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_7.png | [1]   |
| **9)** Points *A* and *B* are separated by a building. To find the distance between them, a surveyor locates a point *C* such that angle CAB =42.9 °.The distance AC = 400 m and BC = 471 m.Find the distance from *A* to *B*, giving your answer to 3 significant figures.       | [1]   |
| **10)** Find the area of the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_8.png | [1]   |
| **11)** The area of triangle ABC is 140 cm2. Find the length of  $x$, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_9.png | [1]   |
| **12)** The area of triangle ABC is 280  $cm^{2}$. Find the size of angle  $x$, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/14683250910_10.png | [1]   |
| **13)** The area of triangle ABC is 109  $cm^{2}$.Find the perimeter of triangle ABC, giving your answer to 3 significant figures.http://www.mathster.com/course/simgs/14683250910_11.png       | [1]   |

**Solutions for the assessment Sine Rule, Cosine Rule and Area Rule**

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| **1)**  $x$ = 16.9 cm | **2)**  $x$ = 63.6 ° |
| **3)**  $x$ = 24.4 cm | **4)**  $x$ = 45.3 ° |
| **5)** acute angle  $x$ = 34.3 °, obtuse angle  $x$ = 145.7 °  | **6)** Distance = 2446.43 km, Height = 2441.6 km |
| **7)**  $x$ = 17.4 cm | **8)**  $x$ = 42.8 ° |
| **9)** Distance = 325 m | **10)** Area = 167  $cm^{2}$ |
| **11)**  $x$ = 12.6 cm | **12)**  $x$ = 76.9 ° |
| **13)** Perimeter = 52.9 cm |  |