**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/124807632990_1.png | [1]   |
| **2)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/124807632990_2.png | [1]   |
| **3)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/124807632990_3.png | [1]   |
| **4)** Find  $x$ in the triangle below, rounding your answer to 1 decimal place.      http://www.mathster.com/course/simgs/124807632990_4.png | [1]   |
| **5)** Find the size of angle  $x$, giving your answer to 1 decimal place.      http://www.mathster.com/course/simgs/124807632990_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 62 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 87.2 ° and 84.9 °, 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/124807632990_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/124807632990_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 =53.8 °.The distance AC = 335 m and BC = 484 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/124807632990_8.png | [1]   |
| **11)** The area of triangle ABC is 90 cm2. Find the length of  $x$, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/124807632990_9.png | [1]   |
| **12)** The area of triangle ABC is 60  $cm^{2}$. Find the size of angle  $x$, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/124807632990_10.png | [1]   |
| **13)** The area of triangle ABC is 122  $cm^{2}$.Find the perimeter of triangle ABC, giving your answer to 3 significant figures.http://www.mathster.com/course/simgs/124807632990_11.png       | [1]   |

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

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| **1)**  $x$ = 20.8 cm | **2)**  $x$ = 32.4 ° |
| **3)**  $x$ = 17.6 cm | **4)**  $x$ = 64.8 ° |
| **5)** acute angle  $x$ = 33.7 °, obtuse angle  $x$ = 146.3 °  | **6)** Distance = 1538.79 km, Height = 1536.95 km |
| **7)**  $x$ = 20.0 cm | **8)**  $x$ = 99.7 ° |
| **9)** Distance = 394 m | **10)** Area = 185  $cm^{2}$ |
| **11)**  $x$ = 11.0 cm | **12)**  $x$ = 28.4 ° |
| **13)** Perimeter = 53.1 cm |  |