**Trigonometry - finding sides and angles**

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| Name : | Class : | Date : |

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| **1)** Identify which sides are the *hypotenuse*, *adjacent* and *opposite* to the given angle ABChttp://www.mathster.com/course/simgs/8809943688_1.png                  | [1]   |
| **2)** Express the cosine of angle ACB as a ratio of the sides of triangle ABChttp://www.mathster.com/course/simgs/8809943688_2.png       | [1]   |
| **3)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/8809943688_3.png | [1]   |
| **4)** Find  $x$ in the triangle below, giving your answer to 3 significant figures      http://www.mathster.com/course/simgs/8809943688_4.png | [1]   |
| **5)** Find angle  $x$ in the triangle below, giving your answer to 1 decimal place.      http://www.mathster.com/course/simgs/8809943688_5.png | [1]   |
| **6)** Find  $x$ in the triangle below, giving your answer to 3 significant figures      http://www.mathster.com/course/simgs/8809943688_6.png | [1]   |
| **7)** Find  $x$ in the triangle below, giving your answer to 3 significant figures      http://www.mathster.com/course/simgs/8809943688_7.png | [1]   |
| **8)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/8809943688_8.png | [1]   |
| **9)** Find angle  $x$ in the triangle below, giving your answer to 1 decimal place.      http://www.mathster.com/course/simgs/8809943688_9.png | [1]   |
| **10)** Find  $x$ in the triangle below, giving your answer to 3 significant figures.      http://www.mathster.com/course/simgs/8809943688_10.png | [1]   |
| **11)** Find angle  $x$ in the triangle below, giving your answer to 1 decimal place.      http://www.mathster.com/course/simgs/8809943688_11.png | [1]   |
| **12)** A safe angle for a ladder is about 75 ° from the ground.If you have a 7.8 metre ladder, how far from a wall should you place the base of the ladder?Give your answer to 3 significant figures.       | [1]   |
| **13)** A safe angle for a ladder is about 75 ° from the ground.If you have a 4.5 metre ladder, how high can it reach up a wall?Round your answer to 3 significant figures.       | [1]   |
| **14)** Luke is looking up at a spaceship. The direct distance from Luke to the spaceship is 13 km.The vertical distance from Luke to the spaceship is 9 km.Calculate the angle of elevation from Luke to the spaceship, giving your answer to 1 decimal place.       | [1]   |
| **15)** The angle of elevation from Austin to a balloon is 44 °.The horizontal distance from Austin to the balloon is 4 km.Calculate the direct distance from Austin to the balloon, giving your answer to 3 significant figures.       | [1]   |

**Solutions for the assessment Trigonometry - finding sides and angles**

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| **1)** Hypotenuse is BC, Adjacent is AB, Opposite is AC | **2)** cosine of angle ACB =  $\frac{a}{h}$ =  $\frac{6}{10}$ |
| **3)**  $x$ = 4.10 cm | **4)**  $x$ = 5.09 cm |
| **5)**  $x$ = 66.8 ° | **6)**  $x$ = 6.39 cm |
| **7)**  $x$ = 8.65 cm | **8)**  $x$ = 6.25 cm |
| **9)**  $x$ = 60 ° | **10)**  $x$ = 5.34 cm |
| **11)**  $x$ = 36.9 ° | **12)** Distance = 2.02 m |
| **13)** Height = 4.35 m | **14)** Angle of elevation = 43.8 ° |
| **15)** Distance = 5.56 km |  |