

Trigonometry #6

1. Convert the following decimal degrees to degrees, minutes and seconds (Use correct symbols):

a) 23.45° _____

b) 0.78° _____

c) 72.358° _____

d) 10.275° _____

2. Convert the following degrees, minutes and seconds to decimal degrees (to 2 decimal places):

a) $16^\circ 48' 25''$ _____

b) $45^\circ 00' 18''$ _____

c) $63^\circ 42'$ _____

d) $84^\circ 33' 57''$ _____

3. Write these answers to 3 decimal places:

a) What is the Cosine of $48^\circ 30' 28''$? _____

b) What is the Sine of $56^\circ 19' 52''$? _____

c) What is the Tangent of $78^\circ 59' 22''$? _____

d) What is the Tangent of $12^\circ 13' 14''$? _____

4. Write these answers in degrees, minutes and seconds (with no decimal places):

a) What angle has a Cosine of 0.4? _____

b) What angle has a Sine of 0.83? _____

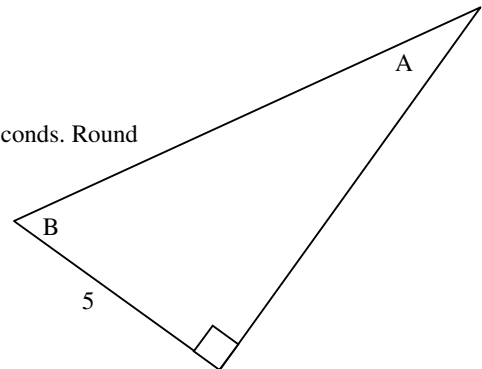
c) What angle has a Tangent of 63? _____

d) What angle has a Sine of 0.86? _____

5. In the diagram on the right, angle A is $27^\circ 42' 16''$.

a) Find the length of the hypotenuse, to 4 decimal places.

b) Use your result to find angle B in degrees, minutes and seconds. Round your answer to the nearest second.



Trigonometry #6 - Answers

1. Convert the following decimal degrees to degrees, minutes and seconds (Use correct symbols):

a) 23.45° _____ $23^\circ 27' 0''$

b) 0.78° _____ $0^\circ 42' 0''$

c) 72.358° _____ $72^\circ 21' 28''$

d) 10.275° _____ $10^\circ 16' 30''$

2. Convert the following degrees, minutes and seconds to decimal degrees (to 2 decimal places):

a) $16^\circ 48' 25''$ _____ 16.81°

b) $45^\circ 00' 18''$ _____ 45.01°

c) $63^\circ 42'$ _____ 63.01°

d) $84^\circ 33' 57''$ _____ 84.57°

3. Write these answers to 3 decimal places (Remember to change to decimal degrees first):

a) What is the Cosine of $48^\circ 30' 28''$? _____ 0.663

b) What is the Sine of $56^\circ 19' 52''$? _____ 0.832

c) What is the Tangent of $78^\circ 59' 22''$? _____ 5.139

d) What is the Tangent of $12^\circ 13' 14''$? _____ 0.217

4. Write these answers in degrees, minutes and seconds (with no decimal places):

a) What angle has a Cosine of 0.4? _____ $66^\circ 25' 18''$

b) What angle has a Sine of 0.83? _____ $56^\circ 5' 55.4''$

c) What angle has a Tangent of 63? _____ $89^\circ 5' 26.2''$

d) What angle has a Sine of 0.86? _____ $59^\circ 18' 59''$

5. In the diagram on the right, angle A is $27^\circ 42' 16''$.

- a) Find the length of the hypotenuse, to 4 decimal places.
b) Use your result to find angle B in degrees, minutes and seconds. Round your answer to the nearest second.

a) $\sin A = 5/H$; $H = 5/\sin A = 10.75$

b) $\cos B = 5/H = 5/10.75$ (rounded)

$B = \cos^{-1}(5/10.75) = 62.282252^\circ = 62^\circ 16' 56''$

