

Notes — Special Right Triangles (Students version) The 45-45-90 Triangle

Why it works:	Draw and label all sides and angles of a 45-45-90 right triangle:
Conclusion:	Example: Given a right triangle with a 45° angle in it and a hypotenuse of 1, find the length of the two legs.

Find the exact and approximate values for each of the following:

	sin	cos	tan
45°			

The 30-60-90 Triangle

Why it works:

Draw and label all sides and angles of a 30-60-90 right triangle:

Conclusion:

Example: Given a right triangle with a 30° angle in it and a hypotenuse of 1, find the length of the two legs.

Find the exact and approximate values for the following:

	sin	cos	tan
30°			
60°			

Notice: $\sin(30^\circ) = \cos(60^\circ)$ and $\sin(60^\circ) = \cos(30^\circ)$. This is the identity $\sin(\theta) = \cos(90^\circ - \theta)$ — the origin of the word 'cosine' (complement's sine). When two angles are complementary, opposite and adjacent simply swap roles.