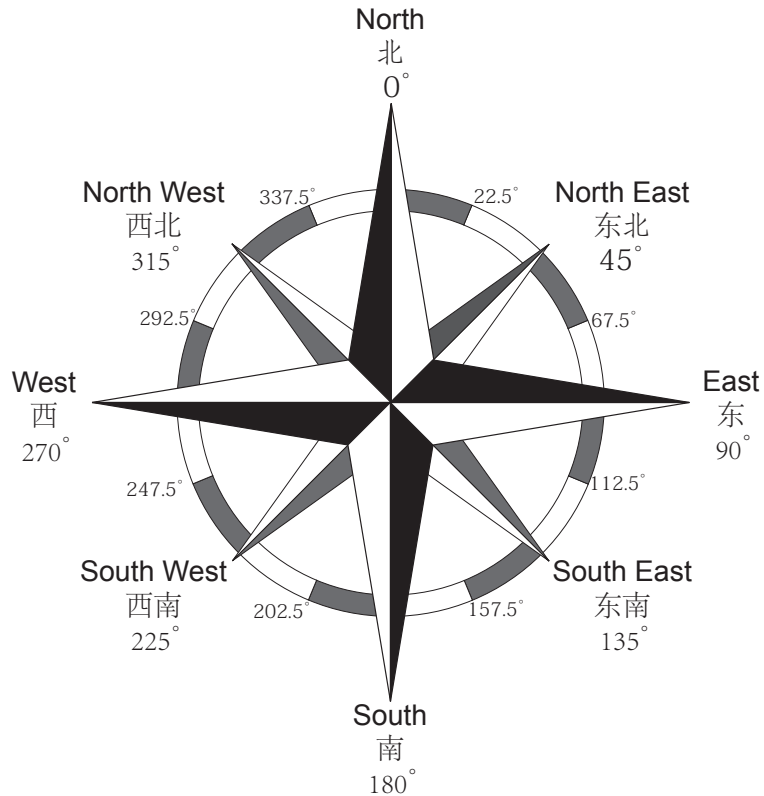


# The Compass Extra Help 指南针额外辅助

## Calculating Compass Degrees (Extra Help) 计算指南针度数 (额外辅助)



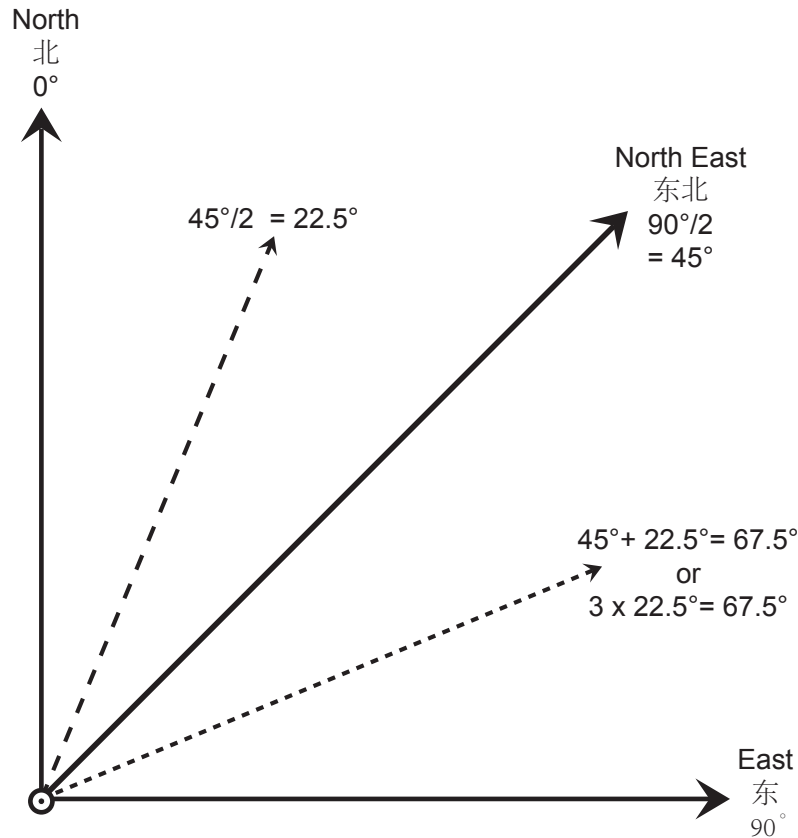
It can be difficult to remember all of the compass degrees, however there are some tricks you can use to help you remember all of the measurements that are indicated on a compass rose.

记住指南针上所有的度数可能不是一件容易的事，但是我们可以运用一些小的技巧来帮助我们记忆。

If you can remember the four major measurements North, East, South and West are all intervals of  $90^\circ$ , you can easily calculate all the other measurements.

如果你能记住北东南西四个方向两两之间相差 $90^\circ$ ，那么记住其他的度数就变得容易多了。

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The measurement for North East is half way between North and East. Divide  $90^\circ$  in half to get the measurement of  $45^\circ$  for North East.

东北方向的度数是位于北和东的正中间，那么 $90^\circ$ 的一半就是 $45^\circ$ ，所以我们得到东北方向是  $45^\circ$ 。

The Measurements in-between the Cardinal or Ordinal points is the same. Divide  $45^\circ$  degrees in half to get the measurement of  $22.5^\circ$  which is the measurement between North and North East.

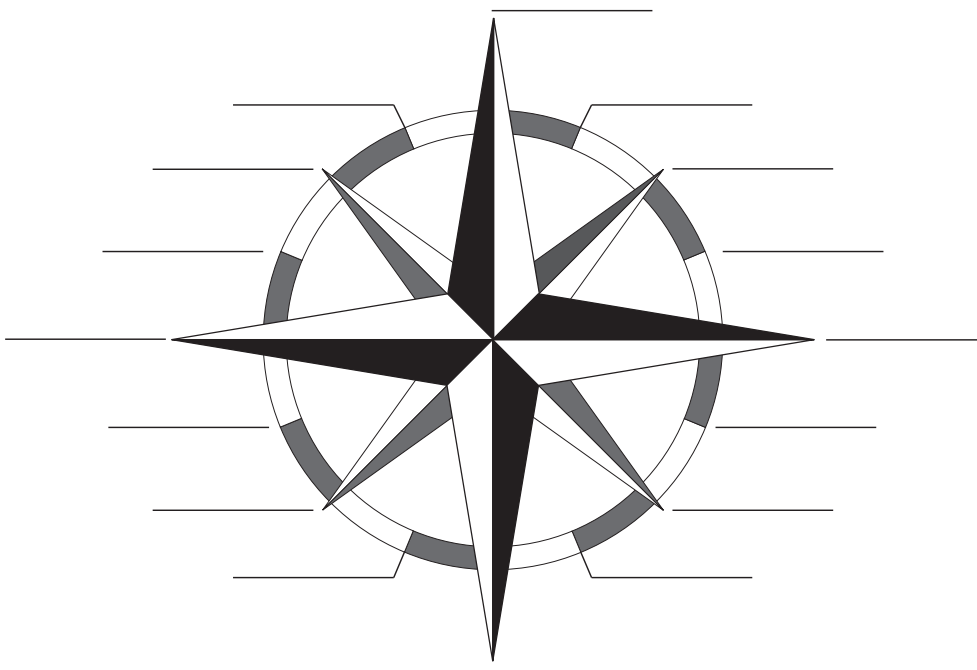
接下来，基本方向和第二基本方向的之间的计算方法也是类似， $45^\circ$ 的一半是  $22.5^\circ$ ，所以在北和东北方向之间的度数是  $22.5^\circ$ 。

The next measurement which is between North East and East is a little different. Add  $22.5^\circ$  to  $45^\circ$  to get  $67.5^\circ$ . The other option is to multiple  $22.5^\circ$  by 3 since it is the third measurement on the compass.

然后东北和东之间的计算方法有点不同，用 $45^\circ$ 加上  $22.5^\circ$ 得到  $67.5^\circ$ ，或者用  $22.5^\circ$  乘以3得到  $67.5^\circ$ 。

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Keep going around the compass solving each measurement.  
按照以上方法完成下表。



You might have notice a distinct patterned, as you solve each measurement around the compass using math.

运用数学的方法计算出每个方向的度数，你可能会发现一个有趣的排列。

0°  
22.5°  
45°  
67.5°  
90°  
112.5°  
135°  
157.5°

Notice the pattern created by the last whole number before the decimal. 0, 2, 5, 7, and then the Pattern starts over again at the next Cardinal Point. Look at your answers and check all your math by looking for this pattern.

我们把每个数小数点之前的数字排列起来是 0, 2, 5, 7, 按照这个顺序又会有一个新一轮的排列，据此来检查一下你自己的答案是否正确。

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Try calculating the measurements one more time for extra practice.

加练：再次计算方向度数

