Name: _____   **Date:** _____
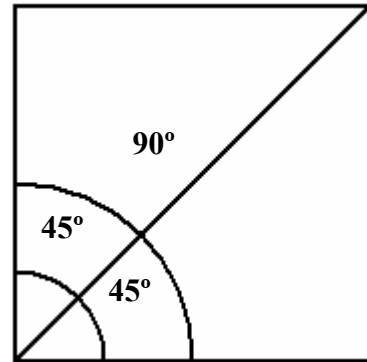
Stay in Shape – Datasheet

Point C

Ship #1:

First find the distance from <u>Point A</u> to <u>Point B</u>:

10 km/hour x 1 hour = _____ km

Next observe that the triangle you have made is ½ of a square. Remembering that all sides of a square have equal lengths, what is the length from <u>Point B</u> to <u>Point C</u>?

_____ km

90º

45º

45º

Point A   **Point B**

Point F

Ship #2:

First find the distance from <u>Point D</u> to <u>Point E</u>:
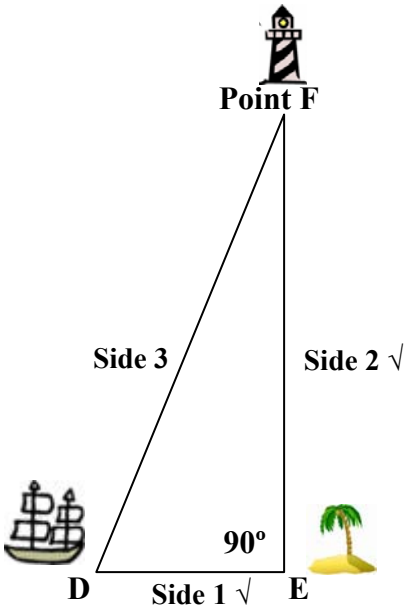
10 km/hour x 1/2 hour = _____ km

We know that the island is 12 km from the lighthouse, so we have the lengths of two sides of the triangle and we know one angle is 90º (this is a "right" triangle). Knowing all this means we can use the Pythagorean Theorem.

Side 3   **Side 2 √**

Side 1 x Side 1 + Side 2 x Side 2 = Side 3 x Side 3:

_____x_____ + _____x_____ = __?__ x __?__

90º

Do the left side first:
_____ = __?__ x __?__   Side 3 = _____ (km)

D   **Side 1 √**   **E**

Ship #3:

First find the radius of the circle in squares (count them on the worksheet). _____. This is the value of one radian for this circle.

So each square is what fraction of a radian? _____ (divide 1 by the number of squares)

Convert the number of squares the ship traveled to radians:
Distance (squares) x radian fraction (radians/square) =
_____ x _____ = _____ radians.

Since 3.14 (pi or π) radians = 180º (half a circle):

_____ (radians) x 180 (degrees) / 3.14 (radians) = _____º (degrees)

Example Angle: number of degrees (draw using protractor)

Use a protractor to measure this number of degrees from the starting point radius of Ship #3. That is where the ship ends up. (Note: the angle drawn in this circle is not correct.)