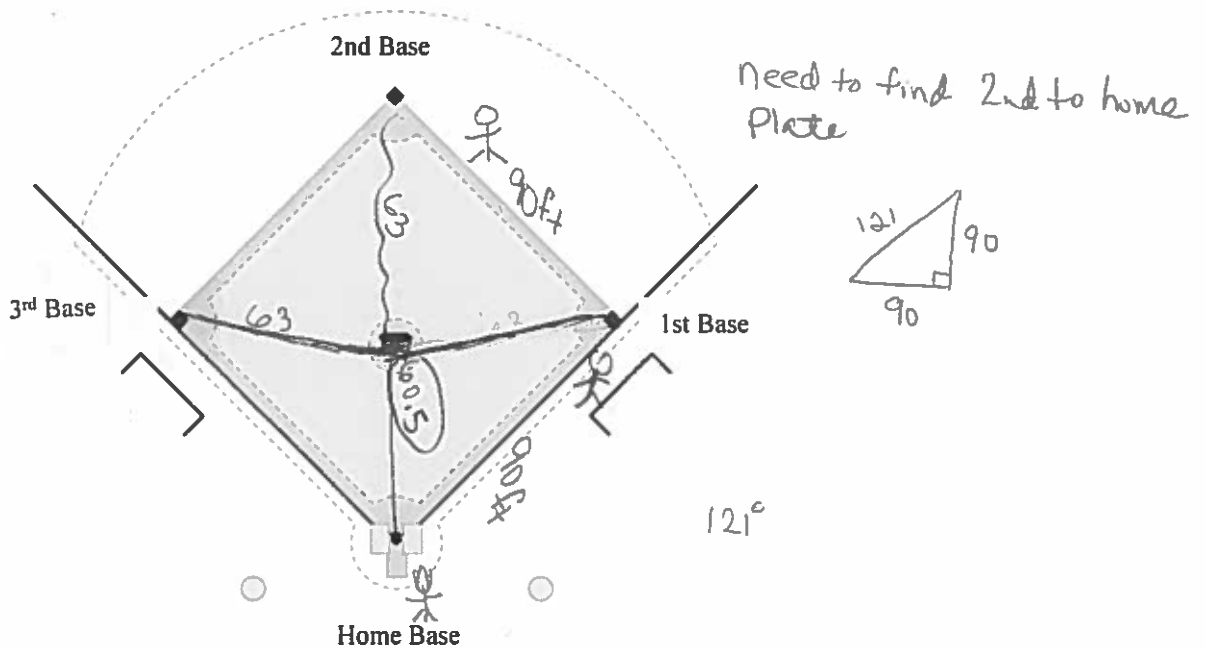


Take Me Out to the Ball Game

The four bases of a major league baseball field form a square which is 90 feet on each side. A drawing of the field is overlaid on a coordinate grid.

- The pitching mound is collinear to home plate and second base.
- The pitching mound is not equidistant from each base.
- The pitching mound is 60.5 feet from home plate.

To which base is the pitcher closest? Mathematically justify your answer and provide a labeled diagram which models the problem and shows all variables to which you will refer.



$$\frac{121.3}{2}$$

$$63.65$$

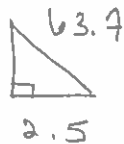
$$63.65^2 + 12.5 = c^2$$

$$4,051.3 + 156.25 =$$

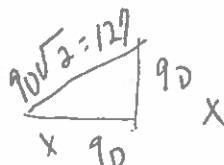
$$\sqrt{4,207.6}$$

$$63.7$$

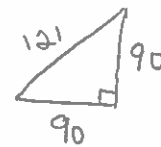
The pitcher is closest to home.



$\times \sqrt{2}$



need to find 2nd to home plate



121°

$$A^2 + B^2 = C^2$$

$$90^2 + 90^2 = 121^2$$

$$8,100 + 8,100 = 16,200$$

1st Base number $\sqrt{16,200}$

^

? ?

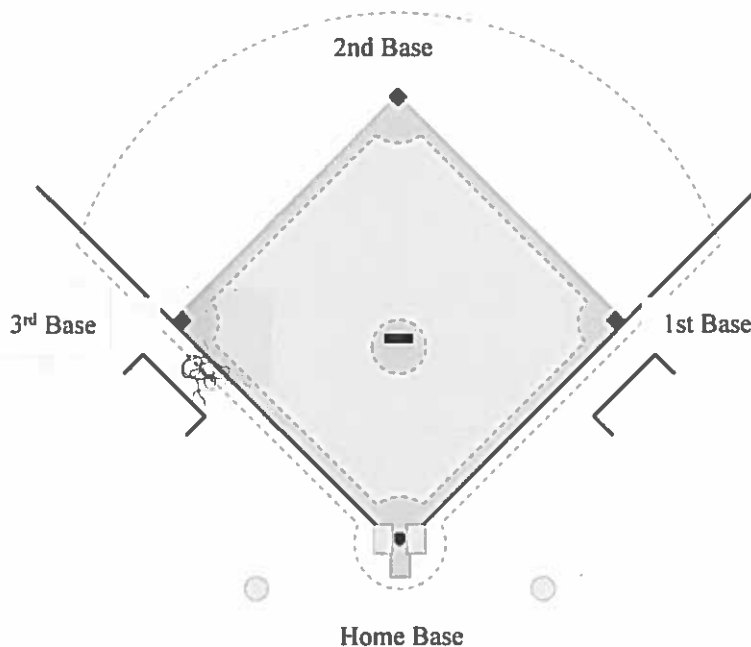
$$90^2 + 90^2 =$$

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$$\frac{90}{\sqrt{2}} = \frac{90\sqrt{2}}{2}$$

$$\frac{90}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$\frac{90\sqrt{2}}{2}$$

$$45\sqrt{2}$$

Would the pitcher mound beat 2.5
 Would 1st and 3rd be equal because
 the distance is the same
 How far would 2nd from home

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Home

2nd Base

90 ft

90 ft

90 ft

90 ft

3rd Base

1st Base

Home Base

60.5

63.65

127.3

63

60.5 x 2

90

90

X

$90^2 + 90^2 = 16200$

$\sqrt{16200} = 127.3$

$\frac{127.3}{2} = 63.65$

$63 - 60.5 = 2.5$

$63.65^2 + 2.5^2 = 4057$

$\sqrt{4057.57} = 63.69$

64

63

63

63

63

60.5

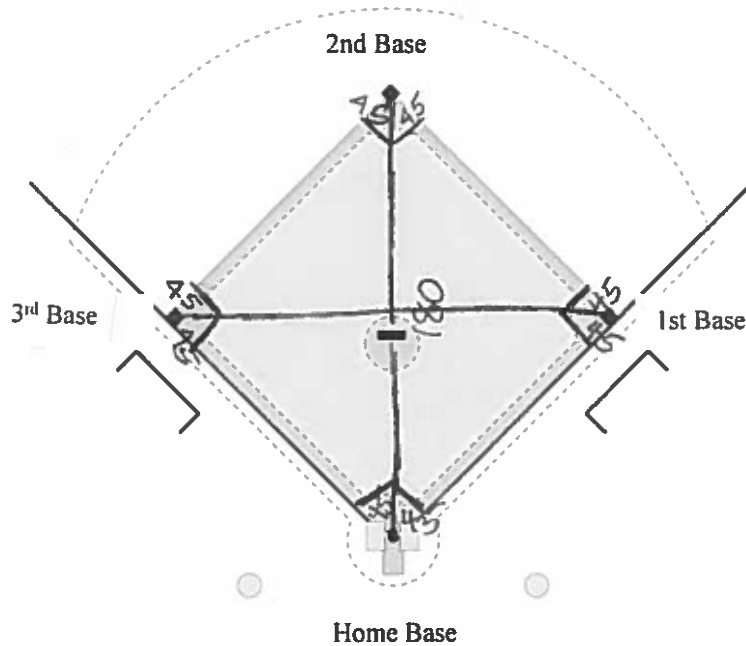
64.3

Take Me Out to the Ball Game

The four bases of a major league baseball field form a square which is 90 feet on each side. A drawing of the field is overlaid on a coordinate grid.

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To which base is the pitcher closest? Mathematically justify your answer and provide a labeled diagram which models the problem and shows all variables to which you will refer.



Att first

$$60.5 \times 4 = 242$$

$$\begin{array}{r} 360 \\ -242 \\ \hline 118 \end{array}$$

$$63.5 - 60.5 = 3$$

$$90\sqrt{2} = 127.27$$

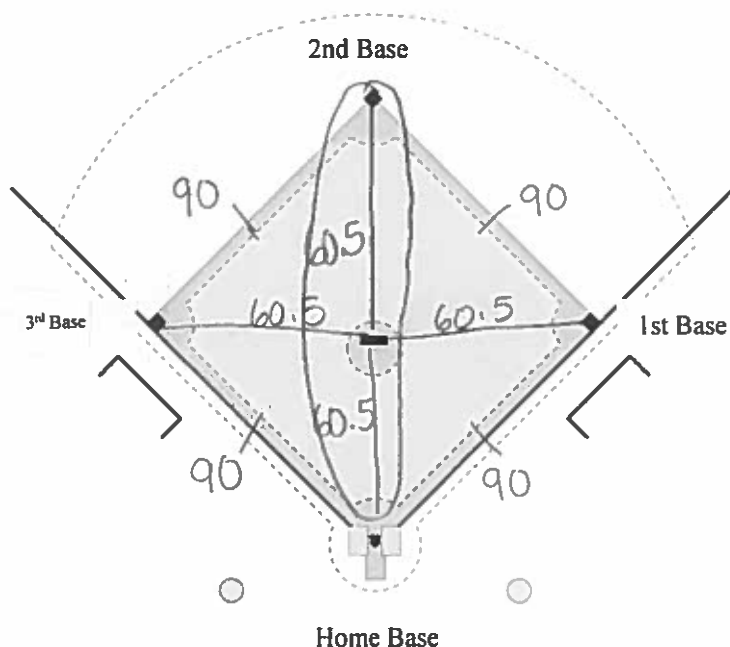
$$\frac{60.5}{2}$$

Take Me Out to the Ball Game

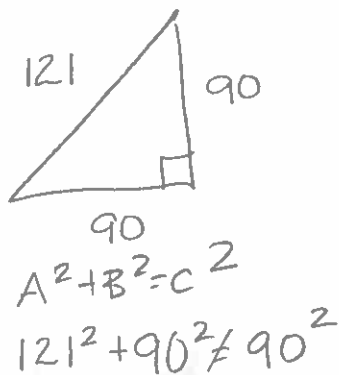
The four bases of a major league baseball field form a square which is 90 feet on each side. A drawing of the field is overlaid on a coordinate grid.

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$$\begin{array}{r} 60.5 \\ + 60.5 \\ \hline 121.0 \end{array}$$



$$\frac{121}{2} = 60.5$$

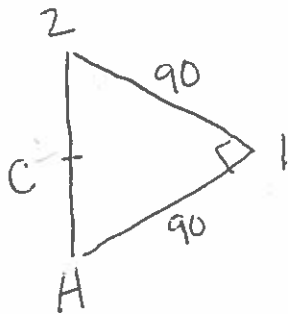
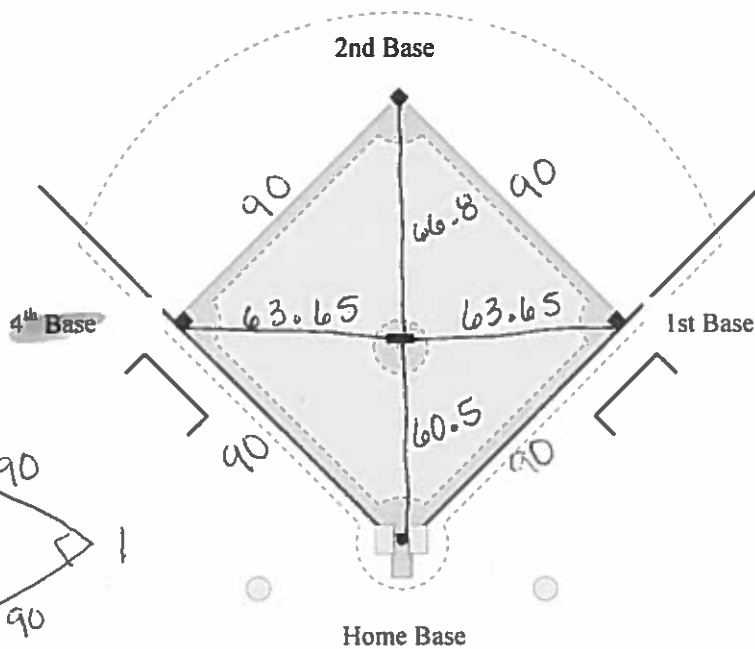
It is closest to all the bases, because it's in the middle.

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$$a^2 + b^2 = c^2$$

$$90^2 + 90^2 = \sqrt{16200}$$

127.3

$$\begin{array}{r} 127.3 \\ - 60.5 \\ \hline 66.8 \end{array}$$

$$\frac{127.3}{2} = 63.65$$

closest to home