Kevin and Dale are planning on meeting at the mall to buy their friend, Ben, a new hat for his birthday. Use the map to answer the following questions. The black dots are the points you need to use for the store/entrance/bathroom.

1. Kevin enters the mall at the west entrance and goes to the Sports Store. Draw a line from the west entrance to the sports store. Dale calls him and says he is at the east entrance of the mall. They meet each other halfway between where they are located. Find the point where they meet, draw a point on the graph, and draw a line from the sports store to the meeting point.

\[(12, 3) \quad (24, 7)\]

\[x_{\text{mid}} = \frac{12 + 24}{2} = \frac{36}{2} = 18 \quad (18, 5)\]

\[y_{\text{mid}} = \frac{3 + 7}{2} = \frac{10}{2} = 5\]
Mall Task

2. From the point where they meet, are they closer to the Sports Store or the Bathrooms that are closest to the East Entrance? Find the distance from the meeting point to both the places in order to answer the question. Show work.

\[
\text{Sports Store: } (12,3) \quad (18,5) \\
\text{Bathroom: } (18,5) \quad (22,10)
\]

\[
d = \sqrt{(5-3)^2 + (18-12)^2} \\
= \sqrt{4 + 36} \\
d = \sqrt{40}
\]

\[
d = \sqrt{(22-5)^2 + (22-18)^2} \\
= \sqrt{25 + 16} \\
d = \sqrt{41}
\]

Sports store is closer.

3. After meeting up, they decide to go to the Toy Store before going to the Hat Store. Find how far is it from where they met up to the Toy Store and draw a line between their meeting point and the Toy Store.

\[
(18,5) \quad (14,11)
\]

\[
d = \sqrt{(14-5)^2 + (14-18)^2} \\
= \sqrt{36 + 1} \\
d = \sqrt{37}
\]

\[6.08\]
4. After looking around the Toy Store, they go to the Hat Store to buy the present. Find the distance from the Toy Store to the Hat Store. Show your calculations. Draw a line between the Toy Store and the Hat Store.

\[(11, 13) (19, 11)\]
\[d = \sqrt{(11-13)^2 + (19-11)^2}\]
\[d = \sqrt{4 + 64}\]
\[d = \sqrt{68}\]
\[8.25\]

5. After purchasing a stylish new hat for their friend, Kevin and Dale say “bye” and leave the mall. Draw a line between the Hat Store and the West Entrance of the mall. Find the total distance that Kevin travels while in the mall. Show work.

\[(11, 13) (2, 9)\]
\[(2, 9) (12, 3)\]
\[d = \sqrt{(2-13)^2 + (9-11)^2}\]
\[d = \sqrt{16 + 81}\]
\[d = \sqrt{97} = 9.85\]
\[d = \sqrt{(3-9)^2 + (12-2)^2}\]
\[d = \sqrt{36 + 100}\]
\[d = \sqrt{136} = 11.66\]

\[9.85 + 11.66 + 6.32 + 6.08 + 8.25 = 42.16\]
On the back of your task sheet. Find the longest distance between any two stores. The straight path cannot go through guest services. State which two stores has the longest distance and what that distance is. Show work.
Mall Task

<table>
<thead>
<tr>
<th>Task</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby/Kitchen</td>
<td>12.73</td>
</tr>
<tr>
<td>Hat/Electronics</td>
<td>12.21</td>
</tr>
<tr>
<td>Nail/Toy</td>
<td>16.12</td>
</tr>
<tr>
<td>Baby/Toy</td>
<td>9.22</td>
</tr>
</tbody>
</table>