### 8th October

A circle has equation \( x^2 + y^2 = 64 \)

Find the circumference of the circle

<table>
<thead>
<tr>
<th>Calculate the largest possible length of BC</th>
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<figure>
![Triangle ABC with AB = 23cm, AC = 20cm, Angle ABC = 55°](triangle.png)

AB = 23cm to the nearest number
AC = 20cm to one significant figure
Angle ABC = 55° to the nearest 5°

A helicopter leaves town A and flies 8km due North to town B. The helicopter then flies on a bearing of 105° for 15km until it reaches town C.

Calculate the direct distance from town A to town C.

Work out \((\sqrt{8} + \sqrt{12})^2\)

\(a\) is directly proportional to \(\sqrt{c}\).
\(w\) is inversely proportional to \(a^3\).

When \(c = 49\), \(a = 35\)
When \(a = 2\), \(w = 16\).

Find the value of \(w\) when \(c = 4\).