3. The sides of a triangle are in the ratio $2 : 4 : 5$

(a) Find the size of the **largest** angle of the triangle, in degrees, to one decimal place.

(2)

Given that the area of the triangle is $140\,cm^2$

(b) find the length of the **shortest** side, in cm, to one decimal place.

(3)

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Question 3 continued

(Total for Question 3 is 5 marks)

4. **In this question you must show all stages of your working.**
Solutions relying on calculator technology are not acceptable.

(i) Using the laws of indices, solve

$$3^{2p-5} = \frac{1}{9}\sqrt{27}$$

(3)

(ii) Find the real roots of the equation

$$x^2 + 1 = \frac{36}{x^2 - 4}$$

(4)

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