find the perimeter of each triangle. Round to the nearest tenth. m<C =109 , a=9cm and b=5cm

Solution

The perimeter of triangle

$$P = a + b + c.$$

According to the Law of cosines we can find the third side of a triangle using two sides and the angle between them:

$$c = \sqrt{a^2 + b^2 - 2a * b * \cos C} = \sqrt{9^2 + 5^2 - 2 * 9 * 5 * \cos 109}$$

$$c = \sqrt{81 + 25 - 2 * 9 * 5 * (-0.325568)} = 11.6\ cm.$$

So let's find the perimeter of triangle

$$P = 9 + 5 + 11.6 = 25.6\ cm.$$

Answer: 25.6 cm.