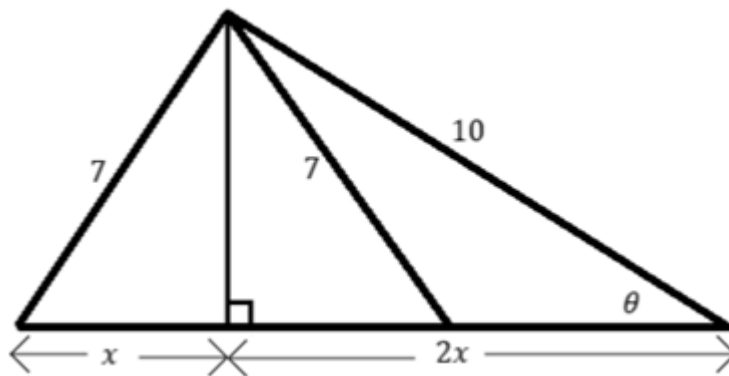


TMUA 2018 Question 19

A triangle ABC is to be drawn with $AB = 10$ cm, $BC = 7$ cm and the angle at A equal to θ , where θ is a certain angle.

Of the two possible triangles that could be drawn, the larger triangle has three times the area of the smaller one.

What is the value of $\cos \theta$?



$$\sqrt{49 - x^2} = \sqrt{100 - 4x^2} \Rightarrow 3x^2 = 51 \Rightarrow x = \sqrt{17}$$

$$\cos \theta = \frac{\sqrt{17}}{5}$$