Answer on Question #42443 – Math - Geometry

Determine whether a triangle can be formed with the given side lengths. If so, use Heron's formula to find the area of the triangle.

a = 240
b = 127
c = 281

Help me please

Solution:
If the sum of the other 2 sides (without longest side) is not longer than the longest side then it can not form a triangle:
$$a + b > c;$$
$$240 + 127 > 281$$
$$367 > 281$$
Hence, lengths a, b and c can form a triangle.

Heron's formula to find the area of the triangle.$\left(s = \frac{a+b+c}{2} = \frac{240+127+281}{2} = 324 - \right.$ half of the triangles perimeter $\left. \right)$:
$$A = \sqrt{s(s-a)(s-b)(s-c)} = \sqrt{324 \cdot (324 - 240)(324 - 127)(324 - 281)} =$$
$$= 15183.8$$
Answer: lengths a, b and c can form a triangle, area of the triangle is equal to 15183.8