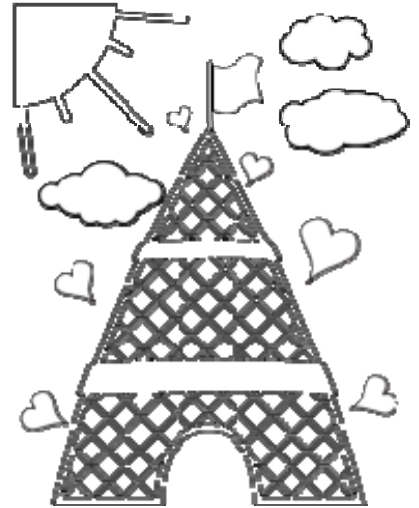Name _____   Date _____

Law of Sines and the Ambiguous Case - Step-by-Step Lesson

In ΔABC, a = 20, c = 16, and m<A = 30⁰.

How many distinct triangles can be drawn given these measurements?

Explanation:

Use the Law of Sines: a/sin A = c/sin c

20/30° = 16/ sin c

20(sin C) = 16*sin30°

sin C = 9*(0.5)/20 = 0.225

Angles could be 30⁰, 13⁰, and 137⁰: sum 180⁰

with m<A = 30⁰ and m<C = 13⁰ the sum of the   angles would exceed 180⁰.Not possible! Therefore, m<C = 13⁰, m<A = 30⁰, and m<B = 137⁰ and only ONE triangle is possible.