

Section 5.6 The Triangle Inequality

Obj: Given 3 sides, determine if a triangle can be drawn.

For a triangle, two sides must add to more than the third side (all combinations of sides)

Can I create a triangle?

2, 3, 4

Yes, I can
create a triangle.

2.5, 2.6, 5.1

$$2.5 + 2.6 < 5.1$$

$$5.1 = 5.1$$

I cannot draw
a triangle.

7, 8, 16

I cannot draw
a triangle.

A triangle has sides of 6 and 10. What are some other possible side lengths?

10 is largest side

$$x + 6 > 10$$

$$\boxed{x > 4}$$

6 and 10 are shorter sides

$$6 + 10 > x$$

$$16 > x$$

$$\boxed{x < 16}$$

pg 248

1-4 all, 13-27 all

28, 30, 41-45 all

The third side must be bigger than 4 and smaller than 16.