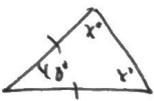



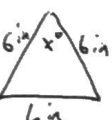
- 10.1.14] a) Not a triangle, one side is not straight.
 b) Is a triangle, 3 straight sides & closed
 c) Not a triangle, 2 sides.


10.1.20] a) $42 + 72 + 76 = 190^\circ$, so no such Δ is possible. $32^\circ, 72^\circ, 76^\circ$ is possible

b) $24 + 63 + 93 = 180^\circ$, so there is such a triangle.

10.1.24] a)  $2x + 48 = 180$
 $x = 66^\circ$
 acute, isosceles Δ

b)  $60 + 90 + x = 180$ right Δ
 $x = 30^\circ$

c)  The Δ is equilateral so $3x = 180$
 $x = 60^\circ$

d)  $x + 58 + 64 = 180$ acute isosceles
 $x = 58^\circ$

10.1.30] The sum of the angles is 180.
 Review translating this into an equation.

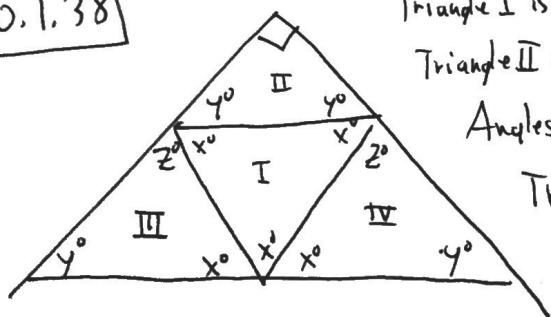
10.1.32] a) Never true. Summing two angles greater than 90° will give $> 180^\circ$.

b) False. Two right angles are supplementary. (Sometimes)

c) True. The three angles sum to 180° , so subtracting the 90° right angle shows that the acute angles sum to 90° . (Always)

d) False. As in c), subtract the obtuse angle from 180° , leaving less than 90° for the two acute angles. (Never)

10.1.38]



Triangle I is equilateral, so $x = 60^\circ$.


Triangle II is a right triangle, so $2y = 90^\circ$, $y = 45^\circ$. So it's also isosceles.

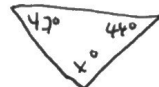
Angles x, y, z sum to 180° , so $z = 180^\circ - 60^\circ - 45^\circ = 75^\circ$.


Triangles III and IV are congruent and are both scalene.

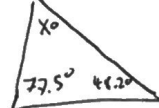
The large triangle is similar to triangle II, so is a right isosceles triangle.

10.1.18]

a)  $x + 43 + 39 = 180$
 $x = 98^\circ$
 obtuse Δ

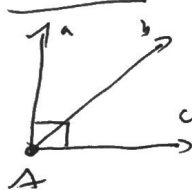
b)  $x + 47 + 44 = 180$
 $x = 89^\circ$
 acute Δ

c)  $x + 55 + 35 = 180$
 $x = 90^\circ$
 right Δ

d)  $x + 77.5 + 48.2 = 180$
 $x = 54.3^\circ$
 acute Δ

10.1.26] No. Complementary angles sum to 90° , while obtuse angles are greater than 90° .

10.1.28]



a) Each pair of rays forms an angle and there are 3 pairs of rays (ab, bc, ac) so 3 angles are formed.

b) a and c form a right angle, the other pairs form acute angles.

c) The two acute angles are complementary.