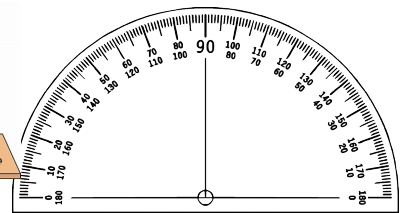




Warm Up Gr. 6  
Lesson 3 part 2



a) If two inside angles of a triangle are  $73^\circ$ ,  $21^\circ$  what is the measure of the third angle? (Show work)

$94^\circ$

$180^\circ$ -given

$180^\circ - 94^\circ$

$86^\circ$

The third angle is  $86^\circ$ .

## Practice

1. Draw 3 different triangles on dot paper. Measure and record each angle.  
Find the sum of the measures of the angles for each triangle.

Many solutions

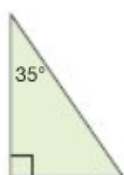
2. Determine the measure of the third angle without measuring.

a)

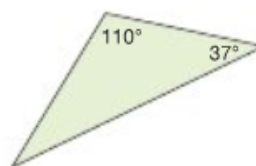


$$\begin{aligned} \text{a) Missing angle} &= 180^\circ - \underbrace{50^\circ - 75^\circ} \\ &= 180^\circ - 125^\circ \\ &= 55^\circ \end{aligned}$$

b)



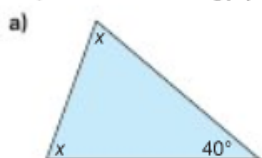
c)



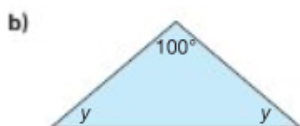
$$\begin{aligned} \text{b) Missing angle} &= 180^\circ - \underbrace{35^\circ - 90^\circ} \\ &= 180^\circ - 125^\circ \\ &= 55^\circ \end{aligned}$$

$$\begin{aligned} \text{c) Missing angle} &= 180^\circ - \underbrace{37^\circ - 110^\circ} \\ &= 180^\circ - 147^\circ \\ &= 33^\circ \end{aligned}$$

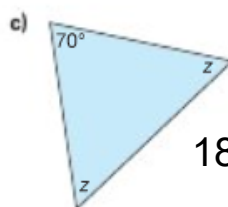
3. The two unknown angles in each triangle below are equal.  
Determine the measure of each unknown angle without measuring.  
Explain the strategy you used.



$$\begin{aligned} 180^\circ - 40^\circ \\ = 140^\circ \\ \text{Sum of } x + x = 140^\circ \\ \\ 140^\circ \div 2 = 70^\circ \\ \text{so } x = 70^\circ \end{aligned}$$



$$\begin{aligned} 180^\circ - 100^\circ \\ = 80^\circ \\ \text{Sum of } y + y = 80^\circ \\ \\ 80^\circ \div 2 = 40^\circ \\ \text{so } y = 40^\circ \end{aligned}$$



$$\begin{aligned} 180^\circ - 70^\circ \\ = 110^\circ \\ \text{Sum of } z + z = 110^\circ \\ \\ 110^\circ \div 2 = 55^\circ \\ \text{so } z = 55^\circ \end{aligned}$$

4. Two angles of a triangle are given.  
Find the measure of the third angle.

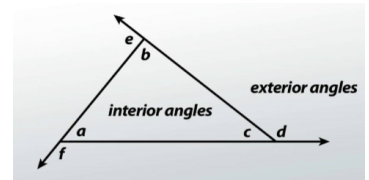
- a)  $55^\circ, 105^\circ$       b)  $45^\circ, 90^\circ$   
c)  $30^\circ, 60^\circ$       d)  $25^\circ, 125^\circ$

a) Missing angle =  $180^\circ - \underbrace{55^\circ - 105^\circ}$       b) Missing angle =  $180^\circ - \underbrace{45^\circ - 90^\circ}$   
 $= 180^\circ - 160^\circ$        $= 180^\circ - 135^\circ$   
 $= 20^\circ$        $= 45^\circ$

c) Missing angle =  $180^\circ - \underbrace{30^\circ - 60^\circ}$       d) Missing angle =  $180^\circ - \underbrace{25^\circ - 125^\circ}$   
 $= 180^\circ - 90^\circ$        $= 180^\circ - 150^\circ$   
 $= 90^\circ$        $= 30^\circ$

The inside angles of a triangle or any polygon is called the interior angles

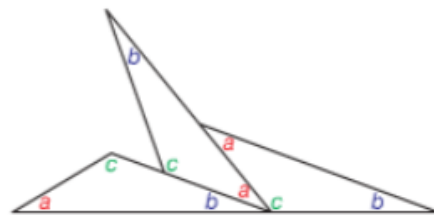
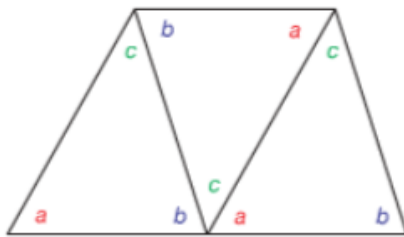
The symbol  $\angle A$  refers to angel A



## MUST STUDY

The sum of the angles in a triangle is  $180^\circ$  (a straight angle)

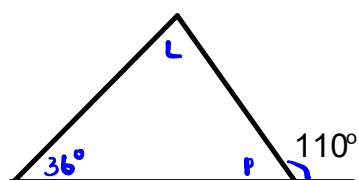
$$\angle a + \angle b + \angle c = 180^\circ$$



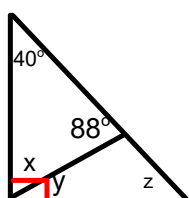
These triangles are not drawn to scale. NO protractors

Find the measure of the missing angles (show work and explain your strategy used)

a)



b)



# Class/Homework

Page 148-149

#6,8ab,9a

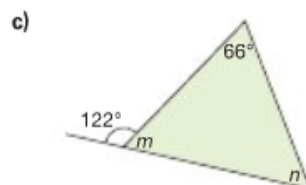
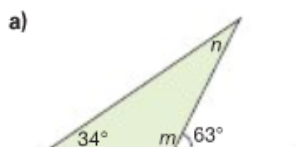
Must show work



7. Find the measure of the third angle in each triangle described below. Then, draw the triangle. Explain how you found each measure.
- a) A triangle with two angles measuring  $65^\circ$  and  $55^\circ$
  - b) A triangle with two equal angles; each measures  $40^\circ$
  - c) A right triangle with a  $70^\circ$  angle



8. Find the measures of the angles labelled  $m$  and  $n$ . Explain the strategy you used.



5. Vegreville, Alberta, is home to the world's largest known Ukrainian egg. It has 1108 triangular pieces with three angles of equal measure. Find the measure of each angle. Explain your strategy.

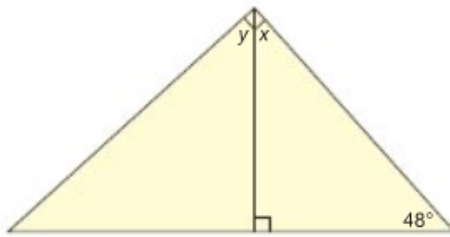


6. Is it possible for a triangle to have:
- a) more than 1 obtuse angle?
  - b) 2 right angles?
  - c) 3 acute angles?
- Explain your thinking.  
Use pictures and words.

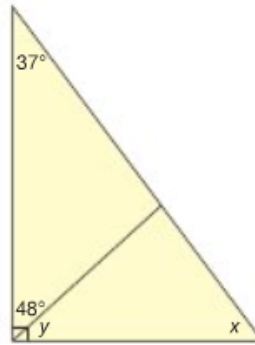


9. Find the measures of the angles labelled  $x$  and  $y$ .  
Show your work. Explain the strategy you used.

a)



b)



## Attachments

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Worksheet Maeasuring Angles with Protractors.pdf