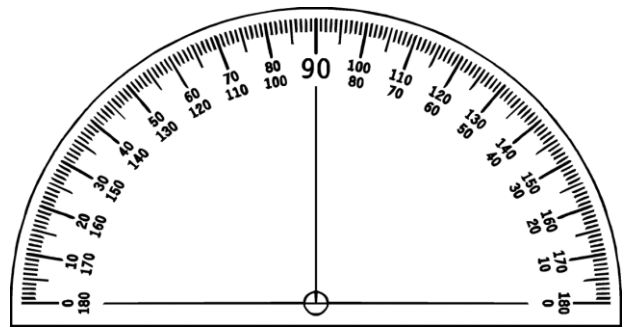
Warm Up Gr. 6

Elearning

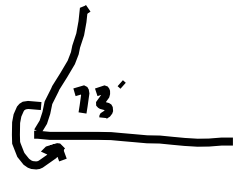
Lesson 3

a) Draw an angle that is 86o.



b) If the inside angle is 73o, what is the reflex angle? (Draw the reflex)

STUDY



REFLEX = 360o - inside

360° − 73

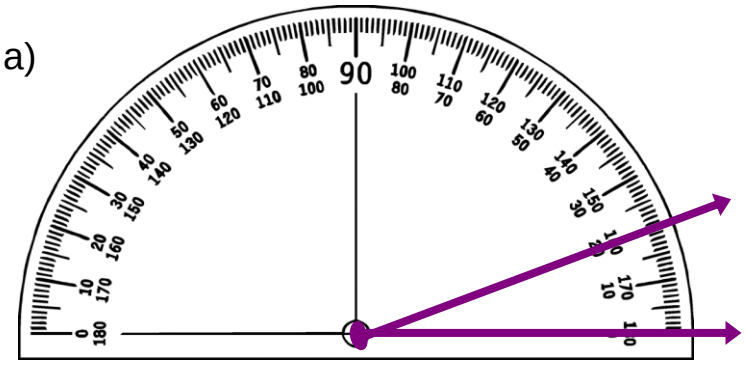
287°

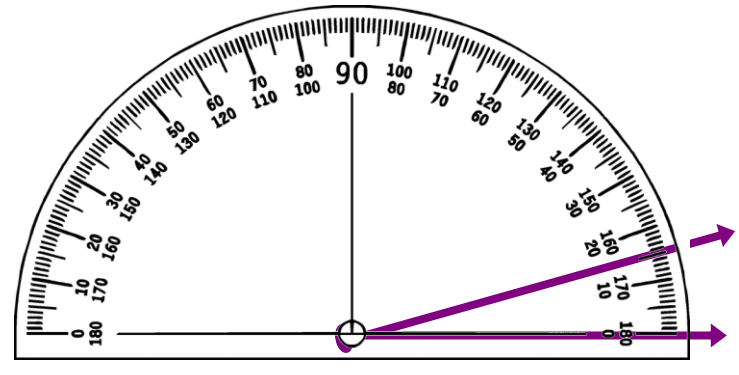
Practice

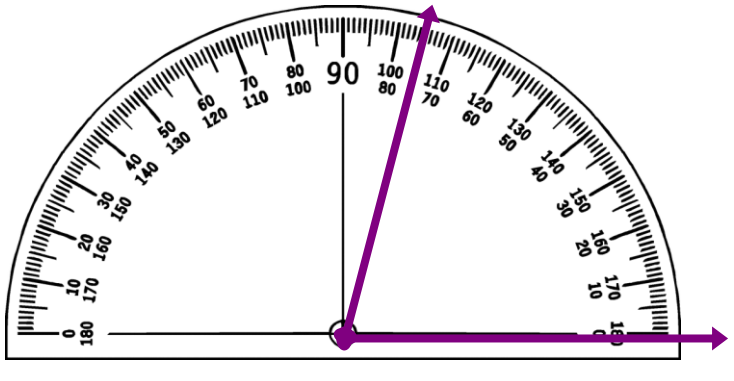
TIP

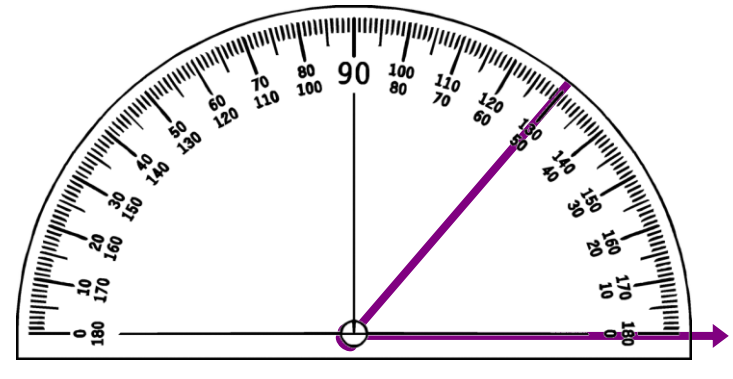
1. Use a ruler and a protractor.
   Draw an acute angle with each measure.
   a) 20° **b)** 15° **c)** 75° **d)** 50°

a)

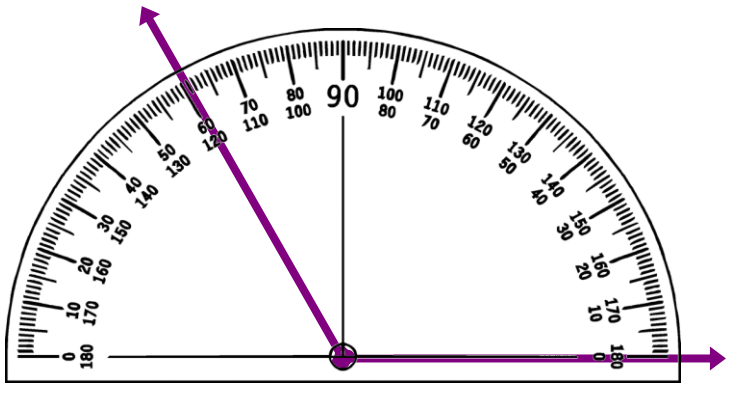


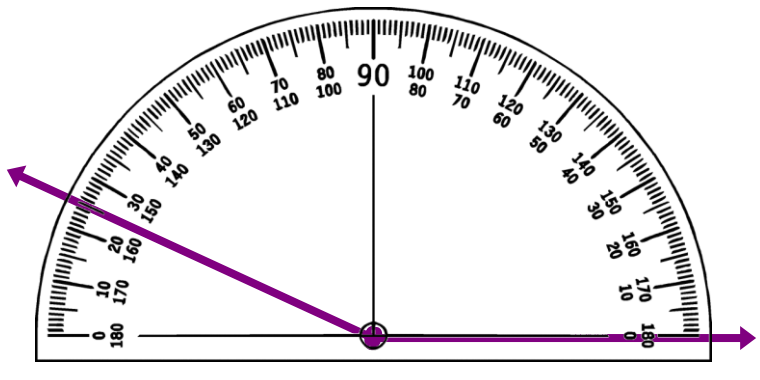


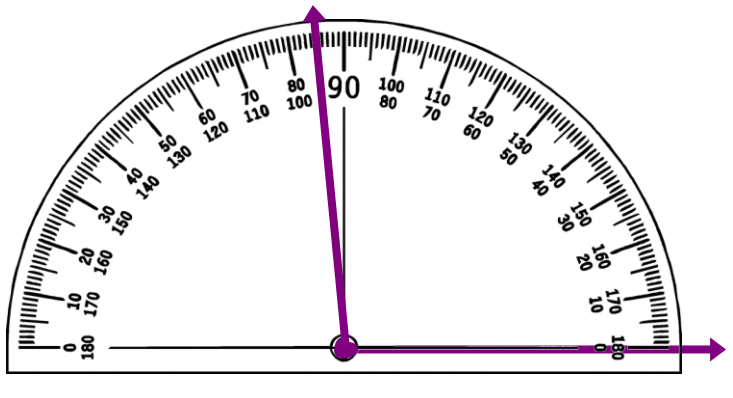


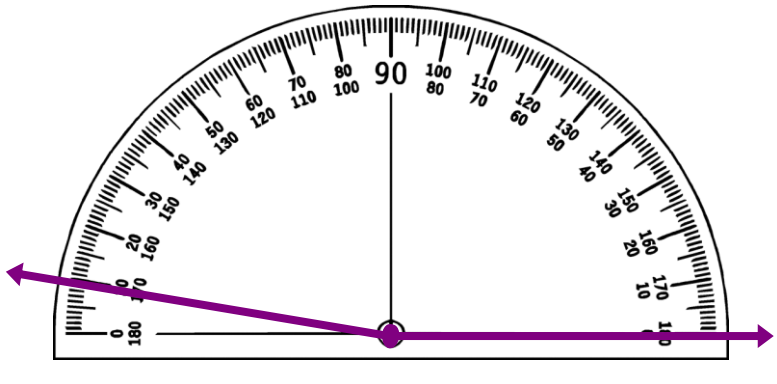


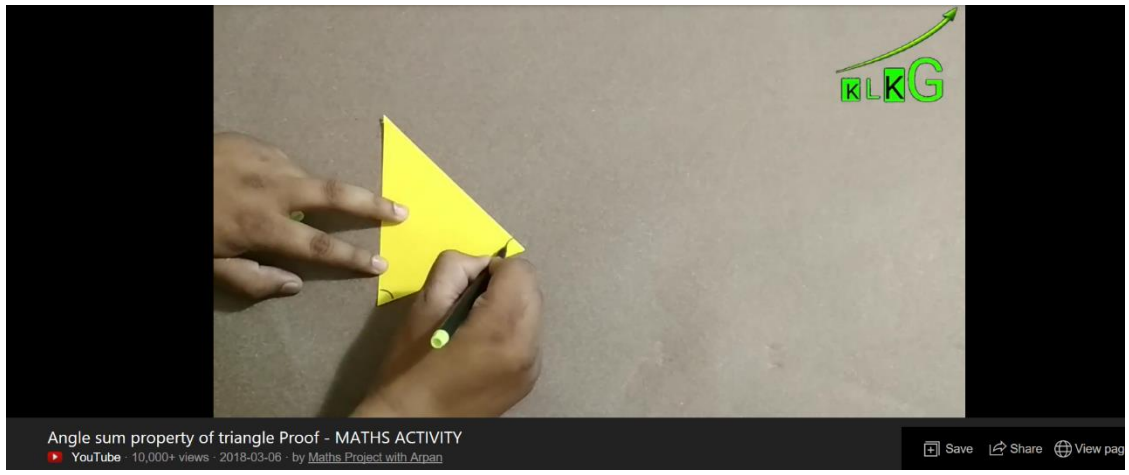
2. Use a ruler and a protractor.
   Draw an obtuse angle with each measure.
   a) 120° **b)** 155° **c)** 95° **d)** 170°











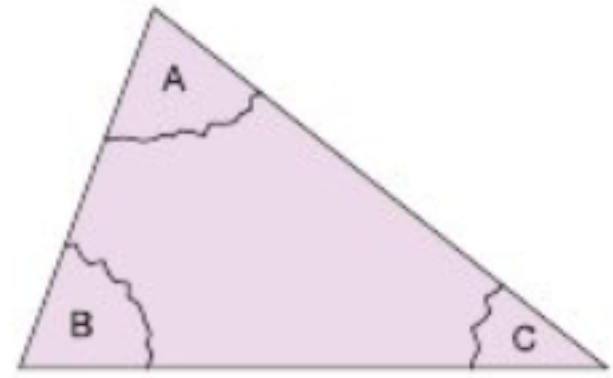
see next page

Explore

You will need a ruler, scissors, and a protractor.

➤ Draw a triangle to match each description below:
- a triangle with one right angle
- a triangle with one obtuse angle
- a triangle with all acute angles

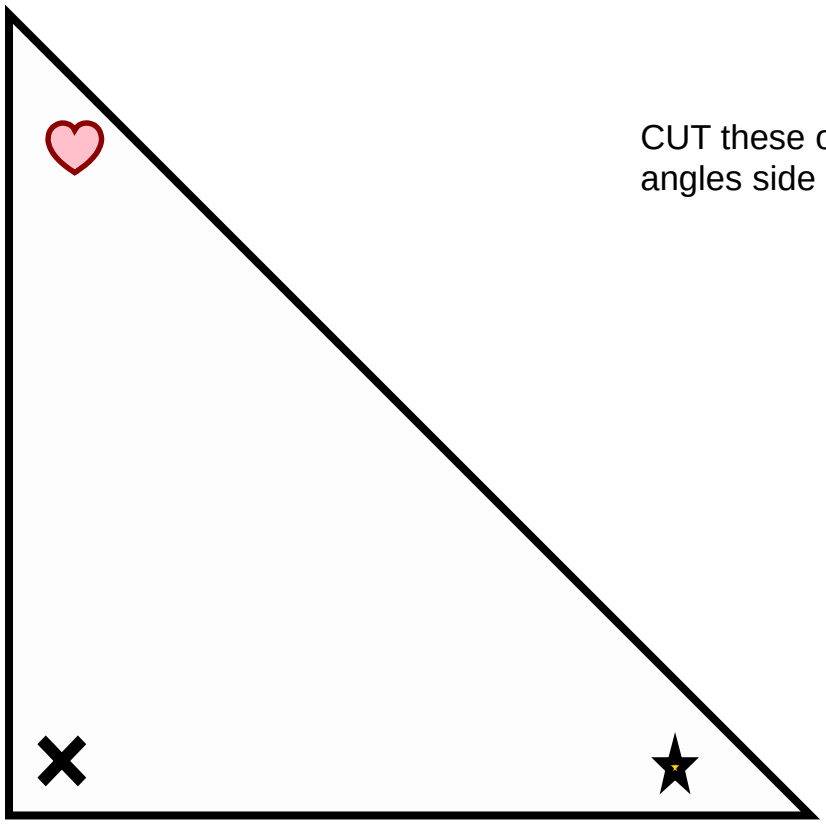
Use a protractor to measure the angles in each triangle.
Record the measures in a table.



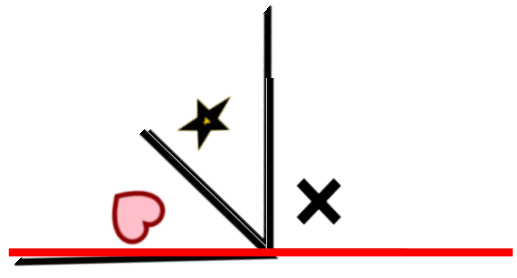
➤ Cut out one of the triangles. Cut off its angles.
Place the vertices of the three angles together so adjacent sides touch. What do you notice?

➤ Repeat the activity with the other two triangles.
What can you say about the sum of the angles in each triangle?

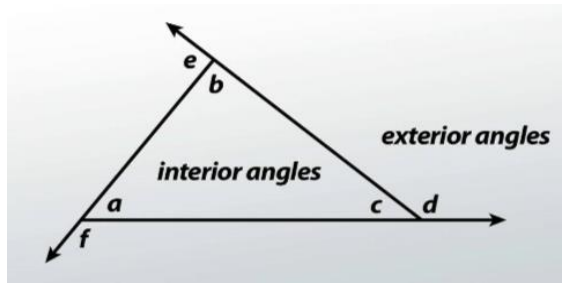
➤ Use the measures in your table.
Find the sum of the angles in each triangle.
Does this confirm your results from cutting off the angles?
Explain.



CUT these out and line up the angles side by side



The inside angles of a triangle or any polygon is called the **<u>interior angles</u>**

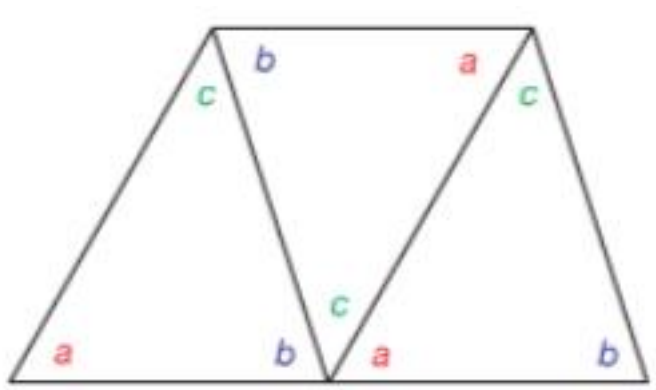


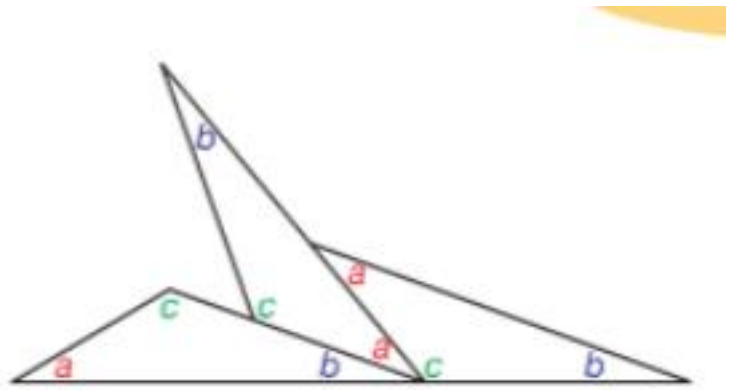
The symbol ∠A refers to angel A

MUST STUDY

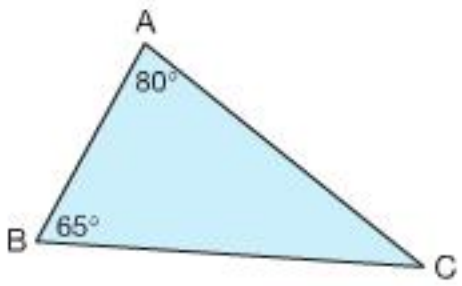
The sum of the angles in a triangle is 180o (a straight angle)

∠a + ∠b + ∠c = 180o





➤ We can use the sum of the angles in a triangle to find the measure of the third angle in this triangle.



We often refer to an angle using the letter of its vertex. For example, the 80° angle in triangle ABC is ∠A.

The sum of the angles in a triangle is 180°.
So, $\angle A + \angle B + \angle C = 180°$
Since $\angle A = 80°$ and $\angle B = 65°$,
$80° + 65° + \angle C = 180°$ Add the angles.
$145° + \angle C = 180°$

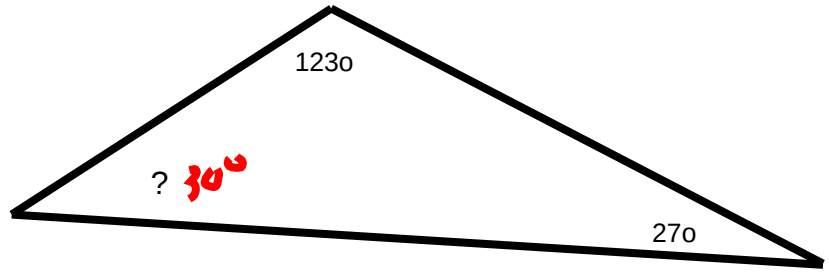
Solve the equation by inspection.
Which number do we add to 145 to get 180?
The measure of $\angle C$ is 35°.

To check, we can find the sum of the 3 angles:
$\angle A + \angle B + \angle C = 80° + 65° + 35°$
$= 180°$
So, the answer is correct.

Find the missing angle (show work)

Study

Missing angle of triangle = 180o - given angles



180o - 123o - 27o

= 30o

Class/Homework

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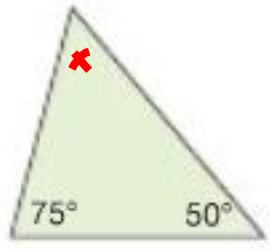
#1(no dot paper just copy) 2,3, 4

Practice

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

a)



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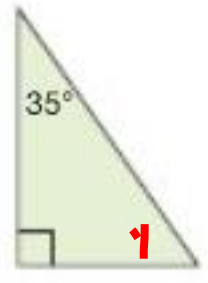
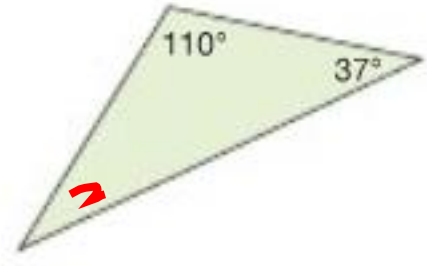
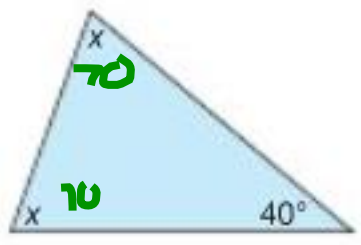


c)



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.

a)



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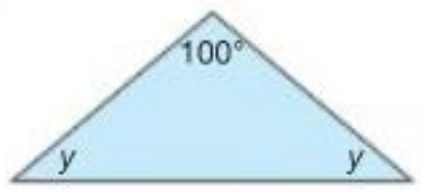

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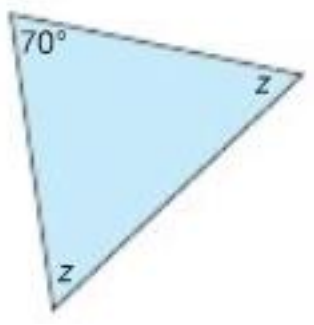


$x + x + 140 = 180$

$x + x = 180 - 40$

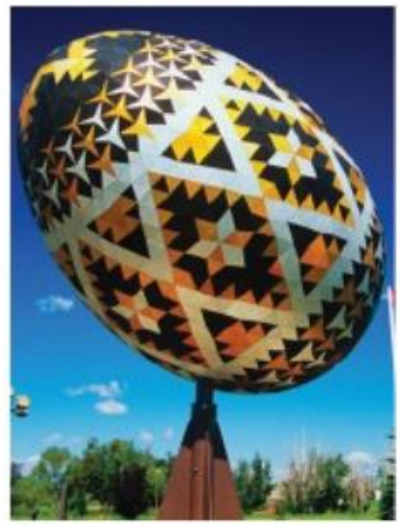
$x + x = 140$

$70 : 70$

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

a) 55°, 105°
b) 45°, 90°
c) 30°, 60°
d) 25°, 125°

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.

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° and 55°

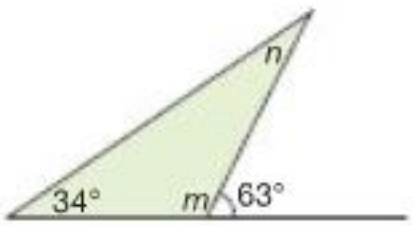
b) A triangle with two equal angles; each measures 40°

c) A right triangle with a 70° angle

TIP

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

a)



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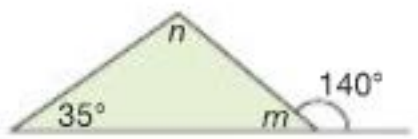

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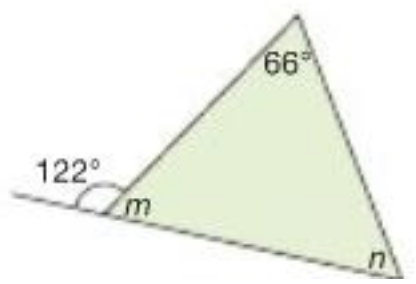
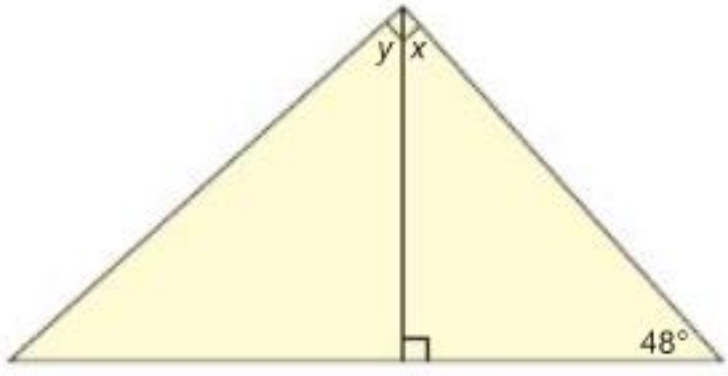


9. Find the measures of the angles labelled x and y.
Show your work. Explain the strategy you used.

a)



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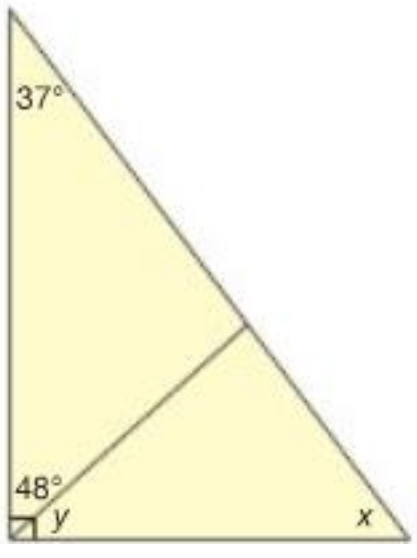
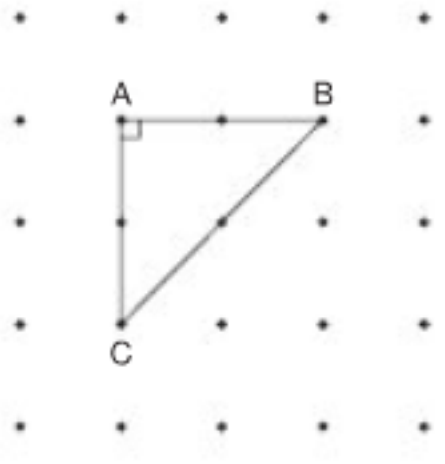


10. Use a geoboard and geobands or square dot paper.
Construct △ABC.



a) Find the unknown angle measures.
Check your answers by measuring with a protractor.

b) Extend AB 1 unit right to D.
Extend AC 1 unit down to E. Join DE.

c) Predict the measure of each angle in the new triangle.
Use a protractor to check. Record your work.

d) Repeat steps b and c two more times.

e) What do you notice about all the triangles you created? Explain.