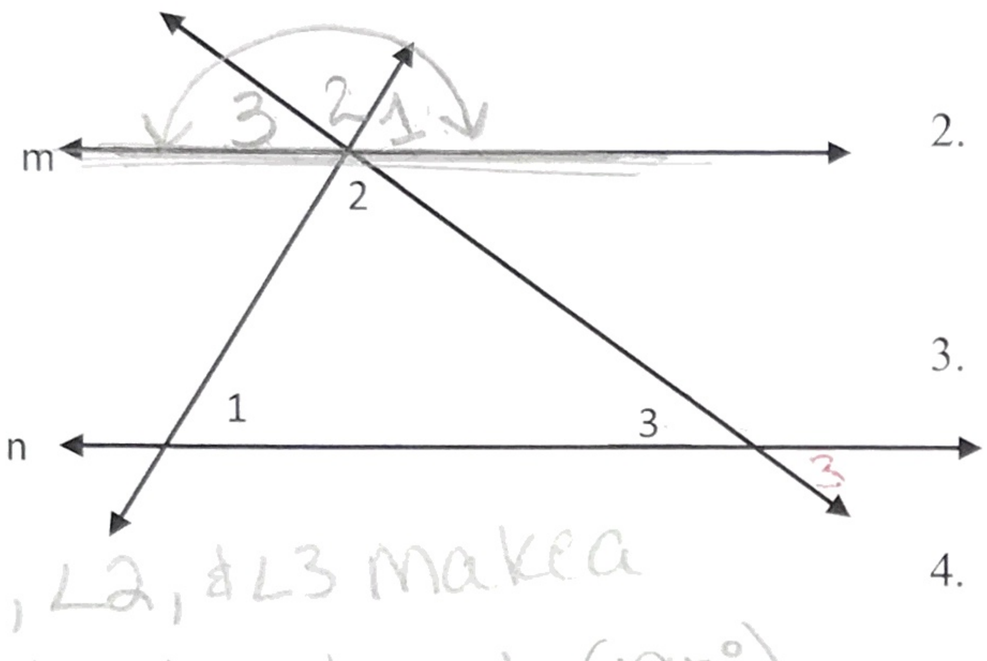
Name: _____ Date: March 4 Hour: 5th

Unit 6B Day 16 and 17: Angles In a Triangle

Focus Question: How are angles related when they are in a triangle?

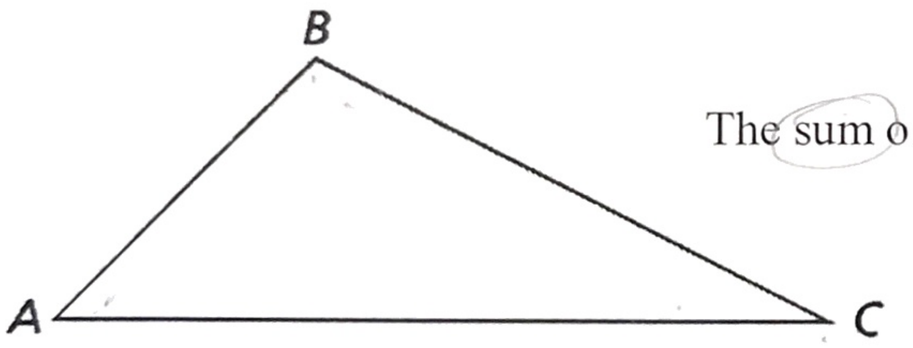
A. **Angles in a Triangle**:
In the figure below, line m//line n.



∠1, ∠2, & ∠3 make a straight angle (180°)

1. How would you describe the location of angles 1, 2, and 3?
inside the △
2. Using a transformation put a 3 in an angle you know is congruent to angle 3. What transformation was used?
Translation
3. Using a transformation, put a 2 in an angle that you know is congruent to angle 2. What transformation was used?
Rotation
4. Using a transformation put a 1 in an angle you know is congruent to angle 1. What transformation was used?
Translation

★ **In a triangle, the Sum of the measures of the interior angles is equal to a straight angle which is 180°.**



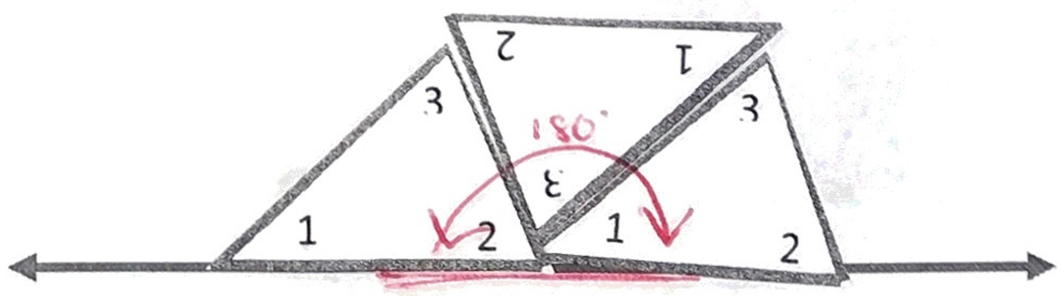
The sum of the measures of angles A, B, and C is 180°.

m∠A + m∠B + m∠C = 180°

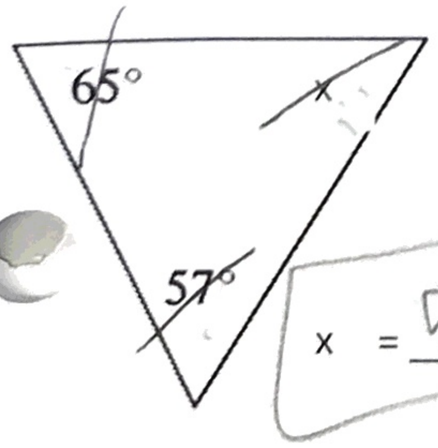
Follow the directions on the provided page to prove a different way that the angles of a triangle add up to 180°.
Paste your work below.

∠1, ∠2, & ∠3 are inside the triangle

AND make a straight angle which are 180°

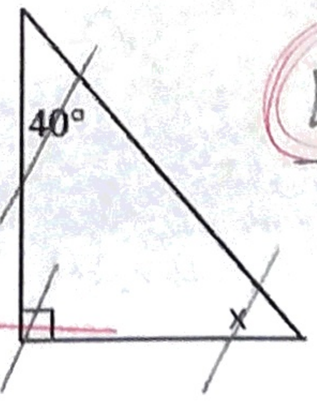


B. Practice: Find the measure of each missing angle....this is 7th grade stuff!



65 + 57 + x = 180
122 + x = 180
-122 -122
x = 58°

x = 58°

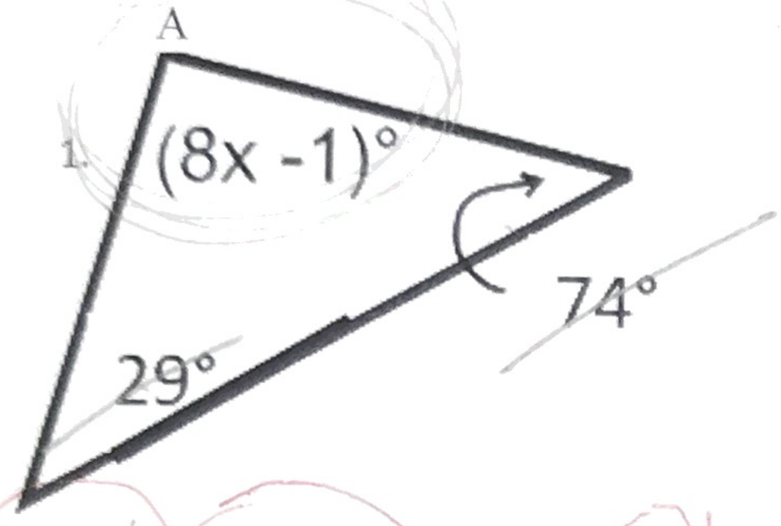


x = _____

40 + 90 + x = 180
130 + x = 180
-130 -130
x = 50

C. Find the value of each variable. Then give the measure of Angle A. (8th

1.



$74 + 29 + 8x - 1 = 180$

$102 + 8x = 180$

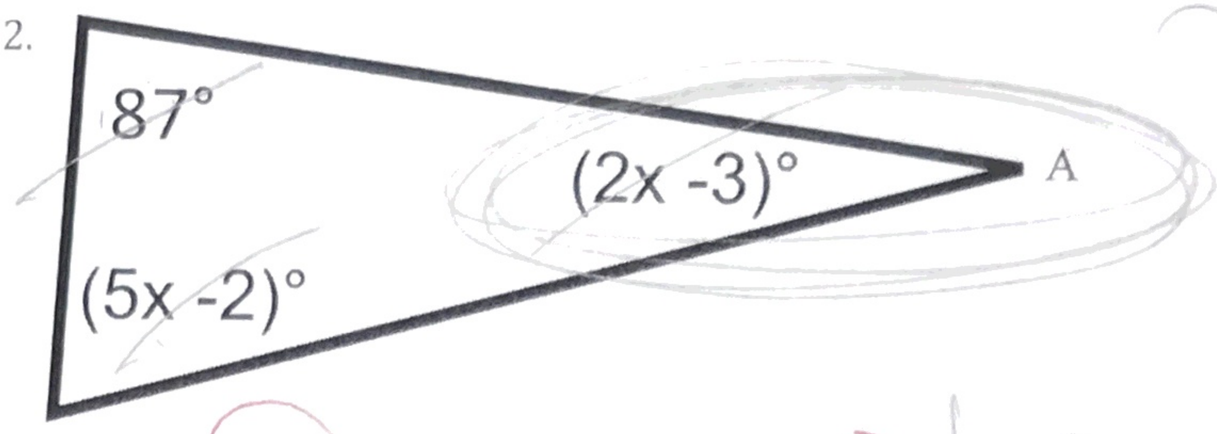
$-102 \quad -102$

$\frac{8x}{8} = \frac{78}{8}$

$x = 9.75$

$m\angle A = 8(9.75) - 1$

2.



$87 + 5x - 2 + 2x - 3 = 180$

$82 + 7x = 180$

$-82 \quad -82$

$\frac{7x}{7} = \frac{98}{7}$

$x = 14$

$m\angle A = 2(14) - 3$

$m\angle A = 25°$

D. Practice using the provided worksheet.

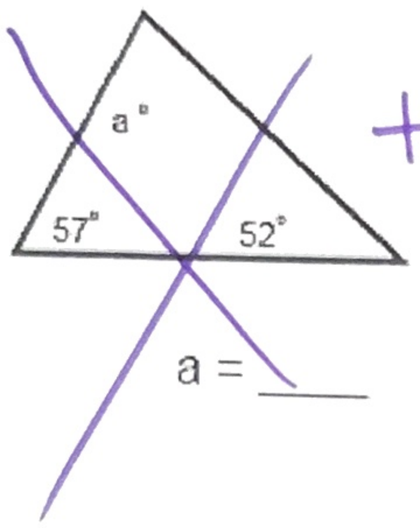
$m\angle A = 77°$

Angles in a Triangle Practice Page

Name: _____

Find the value of the variable in each picture.

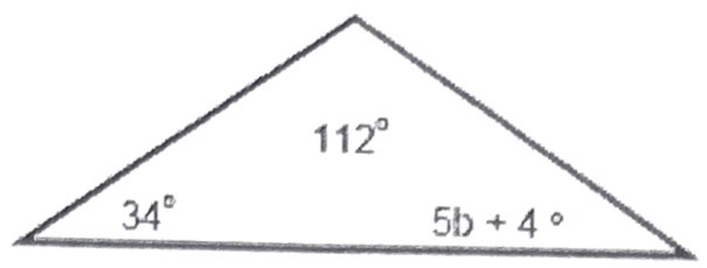
C. 1.



too easy

a = _____

★2.



b = _____

$34+112+5b+4=180$

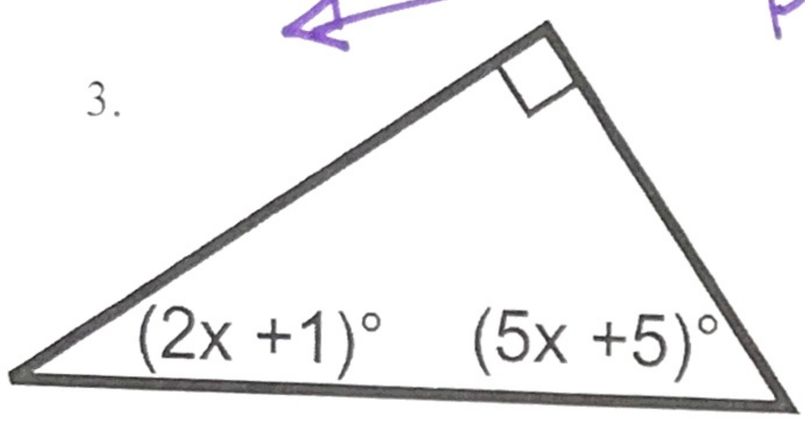
$5b+150=180$

$-150 \quad -150$

$\frac{5b}{5}=\frac{30}{5}$

$b=6$

3.



Pick one

X = _____

$2x+1+5x+5+90=180$

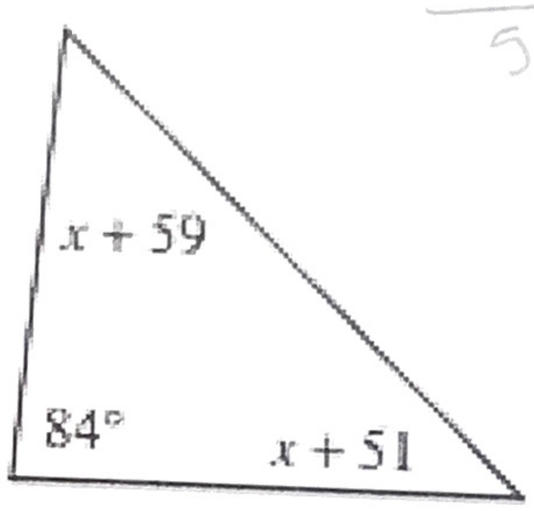
$7x+96=180$

$-96 \quad -96$

$\frac{7x}{7}=\frac{84}{7}$

$x=12$

4.



x = _____

$x+59+84+x+51=180$

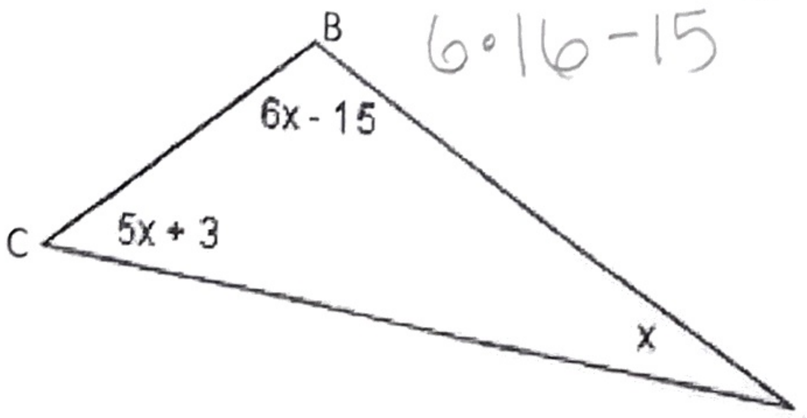
$2x+194=180$

$-194 \quad -194$

$\frac{2x}{2}=\frac{-14}{2}$

$x=-7$

★5. Give the measure of all three angles of the triangle.



$6(16)-15$

$m\angle A =$ 16°

$m\angle B =$ 81°

$m\angle C =$ 83°

$6x-15+5x+3+x=180$

$12x-12=180$

$+12 \quad +12$

$\frac{12x}{12}=\frac{192}{12}$

$x=16$