Name: **Key**   Date: _____ Class: ____

Practice: Interior Angles of a Triangle

1. Find the missing angle.

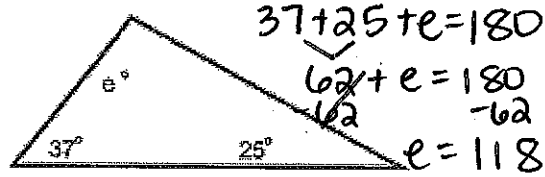$$67 + 55 + f = 180$$
$$122 + f = 180$$
$$-122 \qquad -122$$
$$f = 58$$

check it!
$$\begin{array}{r} ^{2}67 \\ 55 \\ +58 \\ \hline 180 \checkmark \end{array}$$
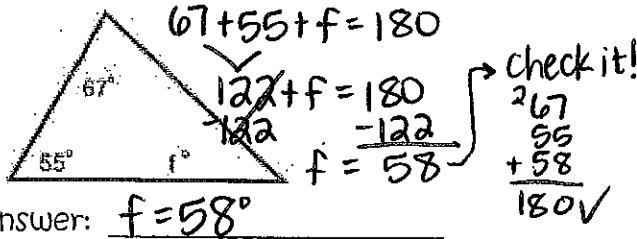
Answer: $f = 58°$

2. Find the missing angle.

$$61 + 90 + z = 180$$
$$151 + z = 180$$
$$-151 \qquad -151$$
$$z = 29$$
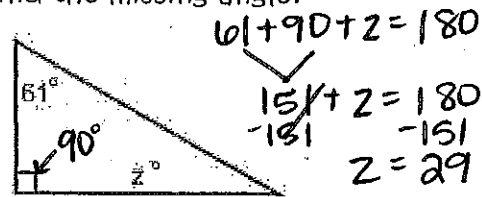
Answer: $z = 29°$

3. Find the missing angle.

$$37 + 25 + e = 180$$
$$62 + e = 180$$
$$-62 \qquad -62$$
$$e = 118$$

Answer: $e = 118°$

4. Find the missing angle.

$$67 + 55 + f = 180$$
$$122 + f = 180$$
$$-122 \qquad -122$$
$$f = 58$$
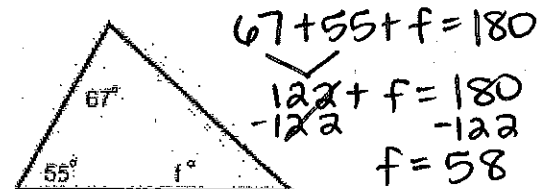
Answer: $f = 58°$

5. Find the number of degrees in the third angle of the triangle.

$$100 + 43 + x = 180$$
$$143 + x = 180$$
$$-143 \qquad -143$$
$$x = 37$$
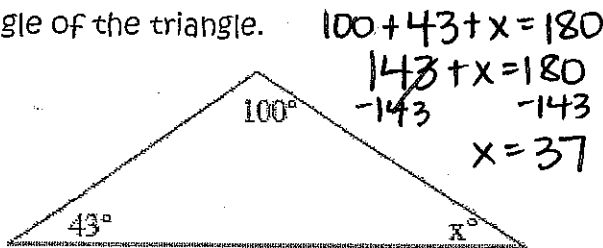
Answer: $x = 37°$

6. An architect is designing a home. What is the measure of the missing angle of the roof?

$$99 + 31 + x = 180$$
$$130 + x = 180$$
$$-130 \qquad -130$$
$$x = 50$$
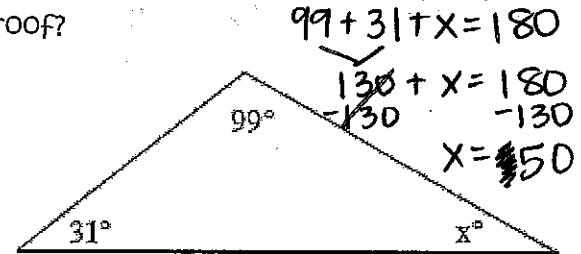
Answer: $x = 50°$

7. There is a slide in the back of the school. A ladder is used to climb to the top of the slide. The angle made with the slide and the ground is 49°. What is the value of x?

$$90 + 49 + x = 180$$
$$139 + x = 180$$
$$-139 \qquad -139$$
$$\boxed{x = 41°}$$
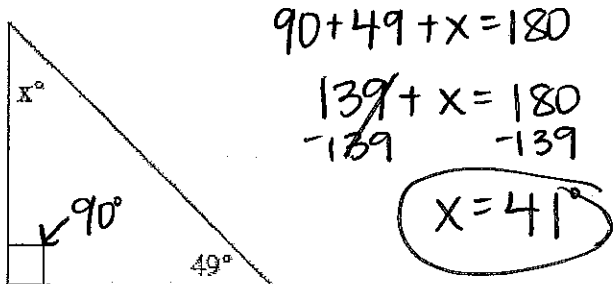
8. A ramp is built to a building to help with deliveries. The angle that the bottom of the ramp makes with the ground is 37.2°. <u>Estimate</u> the measure of the other acute angle.
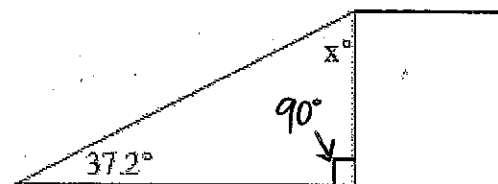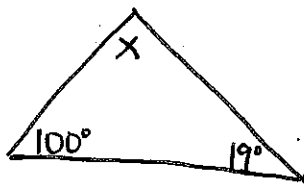
○ A. 63°
○ B. 48°
○ C. 58°
● D. 53°

$$90 + 37.2 + x = 180$$
$$127.2 + x = 180$$
$$-127.2 \qquad -127.2$$
$$x = 52.8$$
$$x \approx 53$$

9. SMP2: I can reason abstractly and quantitatively.
If the measures of two angles of a triangle are 100° and 19°, what is the measure of the third angle?
Draw a picture and show your work.

$$100 + 19 + x = 180$$
$$119 + x = 180$$
$$-119 \qquad -119$$
$$\boxed{x = 61°}$$

10. SMP2: I can reason abstractly and quantitatively.
Explain how a straight angle is related to the angles of a triangle.

straight line

Both the angles of a triangle (added together) and the measure of a straight angle are equal to 180°.

11. SMP3: I can critique the reasoning of others.
On a math test, the students are given a right triangle. One of the acute angles has a measure of 55°. One student says the measure of the other acute angle is 125°. His teacher marked the answer wrong. What is the correct measure of the other acute angle?

right triangle = has a 90° angle.
acute angle = less than 90°
What error might the student have made?

$$90 + 55 + x = 180$$
$$145 + x = 180$$
$$-145 \qquad -145 \qquad \boxed{x = 35°}$$

A. The student only subtracted the right angle from 180°.
B. The student subtracted the sum of the two given angles from 360°.
C. The student added the right angle and the given acute angle, but did not subtract the sum from 180°.
D. The student only subtracted the acute angle from 180°.

12. SMP: I can model with mathematics.
Draw a picture of each scenario below and then give the measure of the missing angle.

Scenario 1: In an acute triangle, the measures of the two angles are 50° and 60°. What is the measure of the third angle?
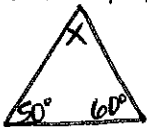
$$50 + 60 + x = 180$$
$$110 + x = 180$$
$$-110 \qquad -110$$
$$x = 70$$
$$\boxed{x = 70°}$$

Scenario 2: In an obtuse triangle, the measures of two angles are 120° and 10°. What is the measure of the third angle?
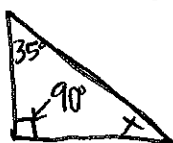
$$120 + 10 + x = 180$$
$$130 + x = 180$$
$$-130 \qquad -130$$
$$x = 50$$
$$\boxed{x = 50°}$$

Scenario 3: One acute angle of a RIGHT triangle measures 35°. What is the measure of the other acute angle?

90°

$$35 + 90 + x = 180$$
$$125 + x = 180$$
$$-125 \qquad -125$$
$$x = 55$$
$$\boxed{x = 55°}$$