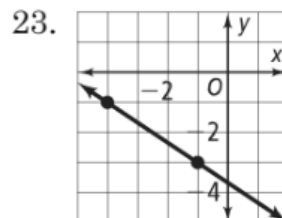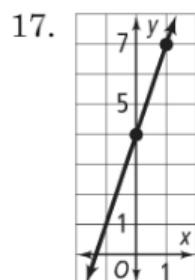Date: **10/28**

Do Now:

Guided Notes Sheet!!

8. 2

10. $\dfrac{8}{3}$

17.

19.

21.

23.
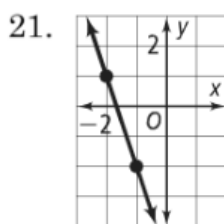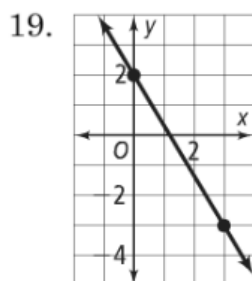
24. $y = 3x + 6$

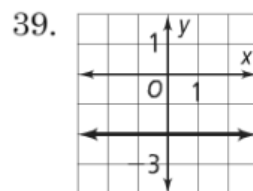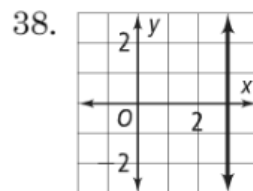26. $y = \dfrac{2}{3}x - \dfrac{14}{3}$

28. $y = \dfrac{1}{4}x + \dfrac{17}{4}$

30. $y = \dfrac{3}{5}x + 5$

32. $y = x + 8$

34. horizontal: $y = 7$; vertical: $x = 4$

36. horizontal: $y = -1$; vertical: $x = 0$

38.

39.

3.5 Triangle Angle-Sum Theorem

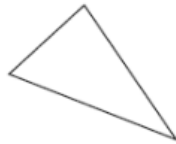Objective: To classify triangles and find the measures of their angles.
To use exterior angles of triangles
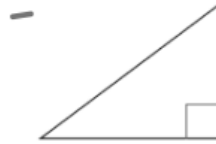
Classifying Triangles
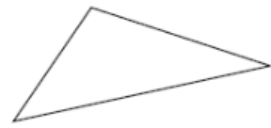
Equiangular
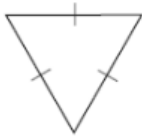all angles congruent

Acute
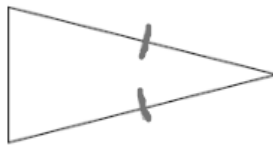all angles acute

Right
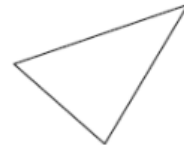one right angle

Obtuse
one obtuse angle

Equilateral
all sides congruent
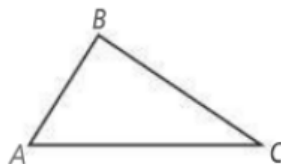
Isosceles
at least two sides congruent

Scalene
no sides congruent

Theorem 3-11 Triangle Angle-Sum Theorem

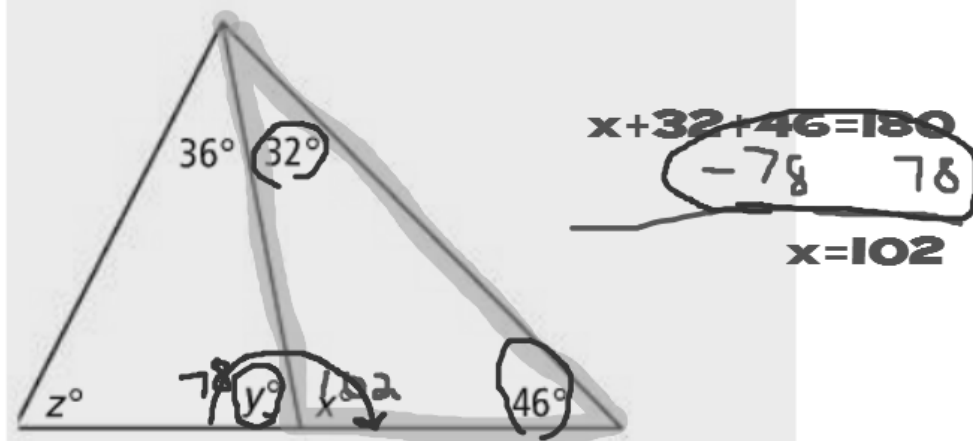The sum of the measures of the angles of a triangle is 180.

$$m\angle A + m\angle B + m\angle C = 180$$

Proof

Visual Explanation

EX. 1

Solve for x, y, and z in the figure below.

36° 32°

z° 78 y° 102 x 46°

$x+32+46=180$

$-78 \quad 78$

$x=102$

$z+36+78=180$

114 117

$z=66$
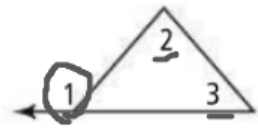
$y=78$

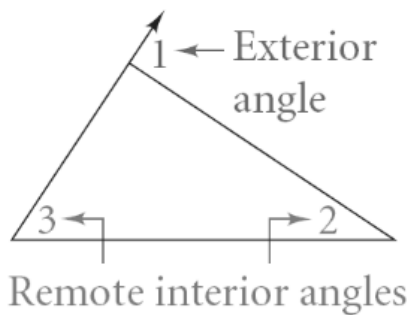## Theorem 3-12 Triangle Exterior Angle Theorem

The measure of each exterior angle of a triangle equals the sum of the measures of its two remote interior angles.
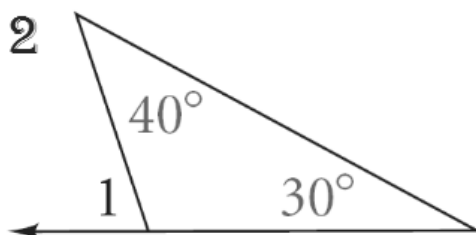
$$m\angle 1 = m\angle 2 + m\angle 3$$

You will prove Theorem 3-12 in Exercise 33.

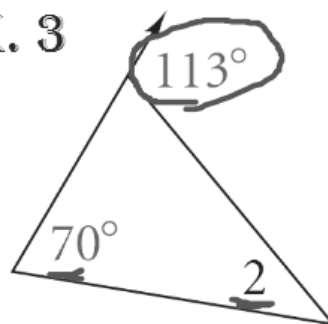## Proof

1 ←— Exterior
       angle

3 ←——————→ 2

Remote interior angles

EX. 2

40°

1   30°

angle 1 = 40+30

$$m\angle 1 = 70$$

EX. 3

113°

70°

2

$$113 = 70 + m\angle 2$$

$$m\angle 2 = 43$$