APRIL 2, 2015 4TH

STARTER

Find x.

①

$55°$ $(x-10)°$

$55 = x - 10$

$+10$ $+10$

$x = 65°$

②
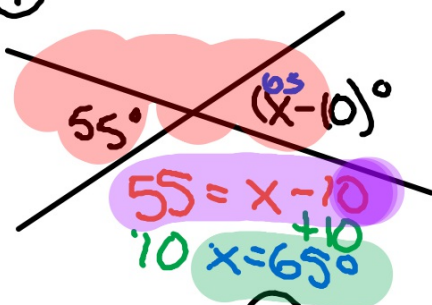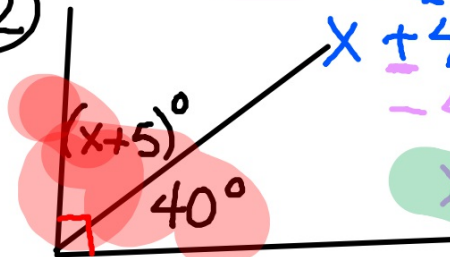
$(x+5)°$ $40°$
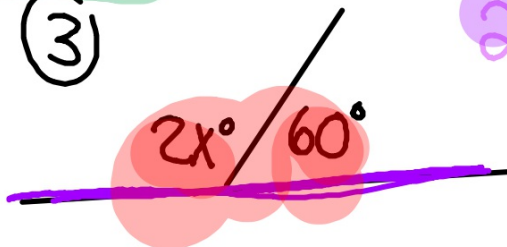
$(x+5) + 40 = 90$

$x + 45 = 90$

$-45 \quad -45$

$x = 45°$

③

$2x°$ $60°$

$2x + 60 = 180$

$-60 \quad -60$

$\dfrac{2x}{2} = \dfrac{120}{2}$

$x = 60°$

4/2 Triangles

New vocabulary word: **TRIANGLE**

3-sided polygon

With your partner, name as many types of triangles as you can! Be prepared to describe them too.

Acute   Scalene

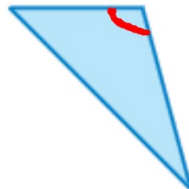Obtuse   Equilateral

Right   Equiangular

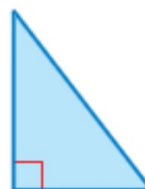Isosceles

Classifying Triangles Using Angles

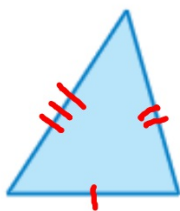| *acute* triangle	*obtuse* triangle	*right* triangle	*equiangular* triangle
all acute angles	1 obtuse angle	1 right angle	3 congruent angles

Classifying Triangles Using Sides

Congruent sides have the same length.
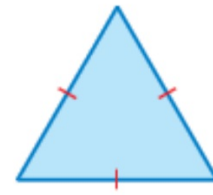
scalene triangle	*isosceles* triangle	*equilateral* triangle
no congruent sides	at least 2 congruent sides	3 congruent sides
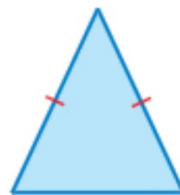
Classify the triangle.

1.

45°
45°

Right
Isosceles

2.

60°
30°

Right
Scalene

3.

50°

Isosceles
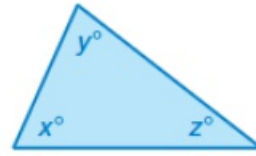*Acute*

4.

114°
33°   33°
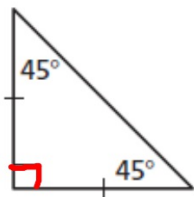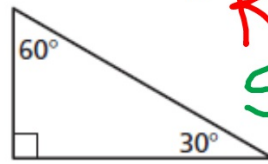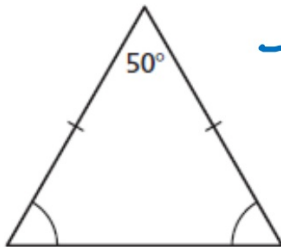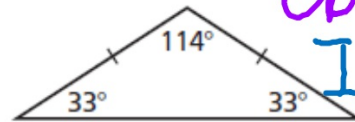
Obtuse
Isosceles

🔑 Key Idea

Sum of the Angle Measures of a Triangle

Words The sum of the angle measures of a triangle is 180°.

Algebra $x + y + z = 180$
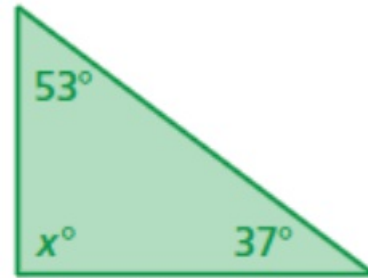
Find the value of x. Then classify the triangle.
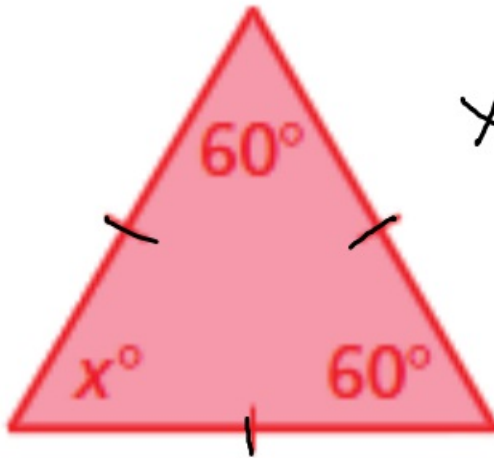
78°

$x°$ 27°

$X + 78 + 27 = 180$
$X + 105 = 180$
$-105 \quad -105$
$X = 75$

53°

$x°$ 37°

$X + 53 + 37 = 180$
$X + 90 = 180$
$-90 \quad -90$
$X = 90$

60°

$x°$ 60°

$X + 60 + 60 = 180$
$X + 120 = 180$
$-120 \quad -120$
$X = 60$

Can you create a triangle using the given combination of these colored segments?

red •——• 2 cm
blue •————• 4 cm
green •——————• 6 cm
purple •————————• 7 cm

The smaller 2 sides have to add up be more than the longest side

2 **6**
Yes!
7

red green purple

No!

blue red purple

12, 30, 21
33

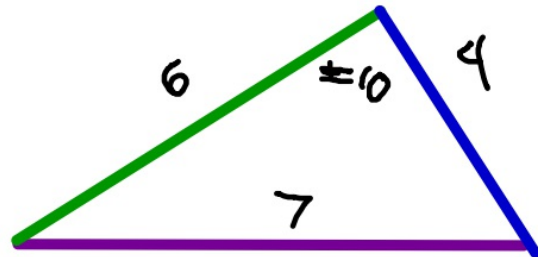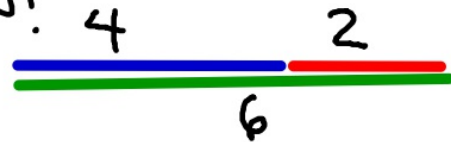blue green red
No!   4   2
          6

6   ≠6   4
        7
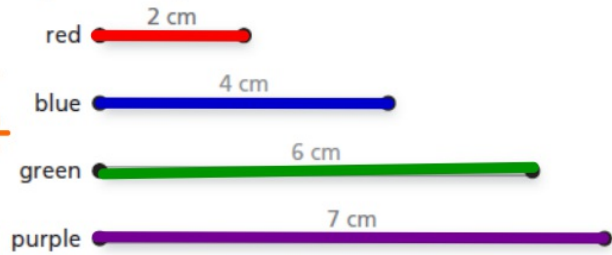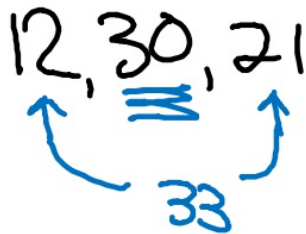
blue green purple

Tell whether a triangle can have the given angle measures. If not, change the first angle measure so that the angle measures form a triangle.

25°, 64°, 91°

$$\begin{array}{r} 1 \\ 25 \\ +64 \\ 91 \\ \hline 180 \end{array}$$

Yes

85°, 64°, 30°

~~85~~ +1 (86)

$$\begin{array}{r} 64 \\ +30 \\ \hline 179 \\ +1 \\ \hline 180 \end{array}$$

33°, 140°, 12°

33 −5 (28)

$$\begin{array}{r} 140 \\ +12 \\ \hline 185 \\ -5 \\ \hline 180 \end{array}$$

HOMEWORK

White WS3

DUE Tues 4/14