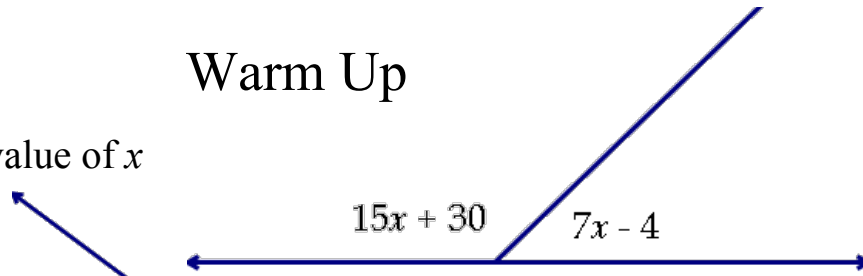
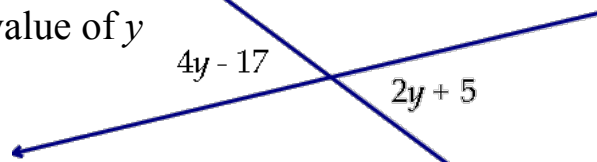


Warm Up

1. Find the value of x



2. Find the value of y



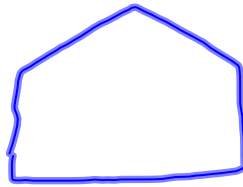
3. What is a polygon with 3 sides called? How about 4 sides? How many different polygons (with the number of sides) can you name?

1-6 Classifying Polygons

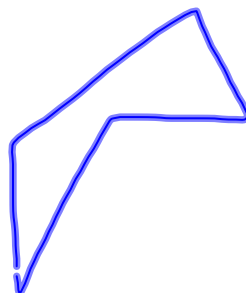
Polygon

enclosed, sides are segments
at least 3 sides

Convex



Concave



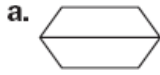
Equilateral — all sides have the same measure

Equiangular — all angles have the same measure

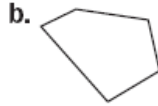
Regular Polygon — equal sides and equal angles

Number of sides	Name
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
12	dodecagon
n	n -gon

Ex.1 Tell whether the figure is a polygon and whether it is concave or convex.



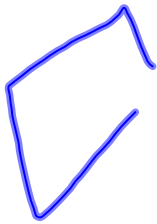
not a
polygon



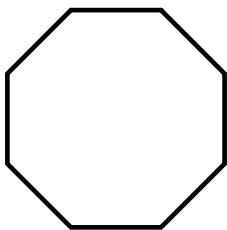
convex
polygon



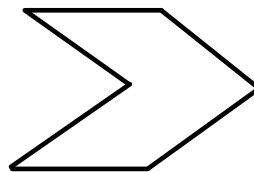
Concave
polygon



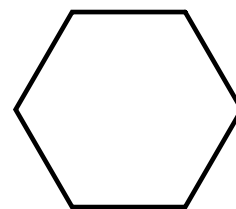
Ex.2 Classify the polygon by the number of sides. Tell whether the polygon is equilateral, equiangular, or regular.



Regular
Octagon



Equilateral
hexagon



Regular
hexagon

Ex. 3 Tell whether the statement is always, sometimes, or never true.

a. A square is convex.



always

b. An octagon is regular.



sometimes

c. An oval is a polygon.

never

Ex. 3 Tell whether the statement is always, sometimes, or never true.

d. A regular polygon is convex.

always

e. A 3-D figure is a polygon.

never

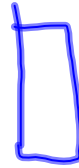


f. A regular polygon is equilateral.

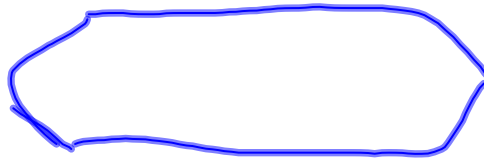
always

Ex. 4 Draw a figure that fits the description.

- a. A quadrilateral that is not regular

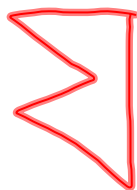


- b. A hexagon that is equiangular but not equilateral



Ex. 4 Draw a figure that fits the description.

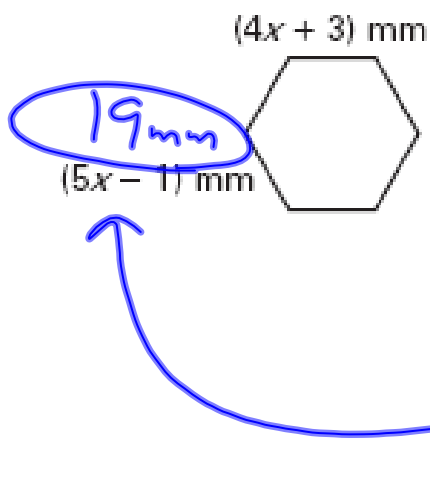
- c. A concave pentagon



- d. A triangle that is not equiangular



- Ex. 5 The head of a bolt is shaped like a regular hexagon. The expressions show the length of the side. Find the length of a side.


$$\begin{array}{r} 4x + 3 = 5x - 1 \\ -4x \quad -4x \\ \hline 3 = x - 1 \\ 4 = x \end{array}$$

The handwritten solution shows the equation $4x + 3 = 5x - 1$ with $4x$ and $-4x$ crossed out. The result is $3 = x - 1$, and finally $4 = x$ is circled in blue. An arrow points from this circled result to the $(5x - 1)$ mm side of the hexagon, which is labeled with a circled 19mm .

- Ex. 6 Make up a problem similar to example 5 using a regular polygon, then solve your problem.