

Geometry

1. Geometry Basics

1.3 Describing Angles

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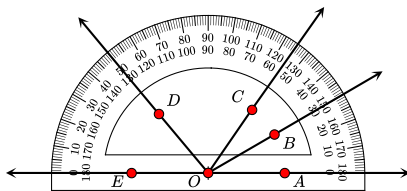
Exercises

Find all solutions to exercises via

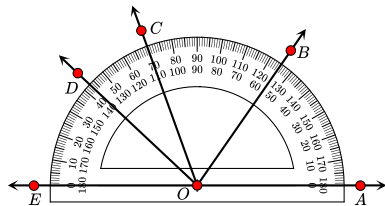
https://mathleaks.com/study/describing_angles or scan the QR code



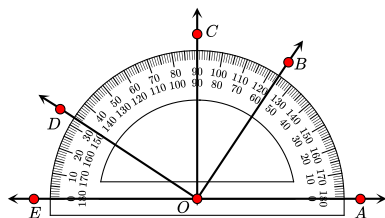
- 1.1** Use the diagram to measure and then classify $\angle AOC$.



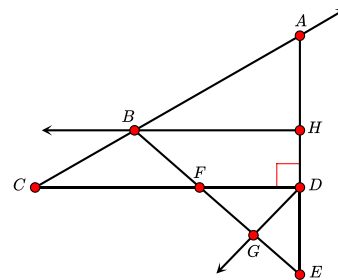
- 1.2** Use the diagram to measure and then classify $\angle BOE$.



- 1.3** Use the diagram to measure and then classify $\angle AOC$.



- 1.4** In the diagram below, find two obtuse vertical angles.



- 1.5** Classify the angles created when

A bisecting an acute angle.

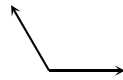
B bisecting a right angle.

C bisecting an obtuse angle.

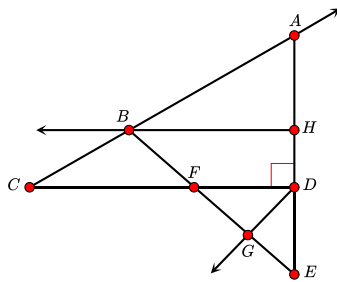
D bisecting a straight angle.

- 1.6** Bisect an angle and explain the steps.

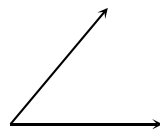
- 1.7** Use a compass and a ruler to copy and to bisect the angle presented in the diagram below.



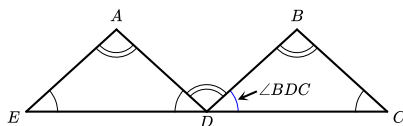
- 1.8** In the diagram below, find two acute vertical angles.



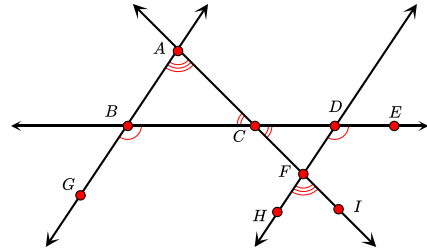
- 1.9** Use a compass and a ruler to copy and to bisect the angle presented in the diagram below.



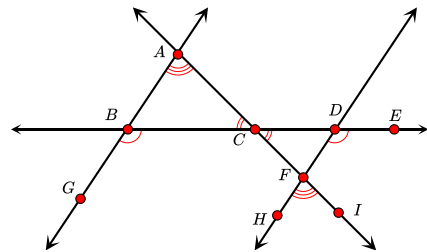
- 1.10** In the diagram below $m\angle AED = 33^\circ$ and $m\angle EAD = 114^\circ$. Use this to find $m\angle BDC$.



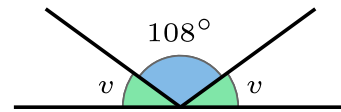
- 1.11** Use the diagram to find an angle which is congruent with $\angle FCD$.



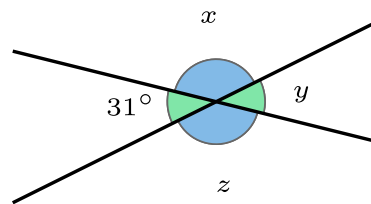
- 1.12** Find $m\angle HFI$ using the diagram and that $m\angle BAC = 70^\circ$.



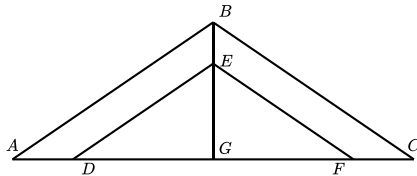
- 1.13** Find $m\angle v$.



- 1.14** Two lines intersect each other in the image below. Determine the measures of the angles x , y and z .



1.15 In the diagram below the segment \overline{BG} bisects both $\angle ABC$ and $\angle DEF$. Use that $m\angle ABC = 114^\circ$ and that $\angle ABC \cong \angle DEF$ to find the measure of each indicated angle.



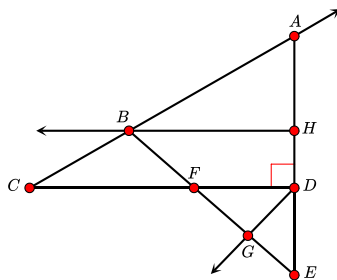
- A** $m\angle DEF$

- B** $m\angle ABG$

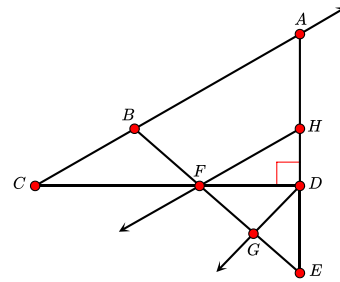
- C** $m\angle CBG$

- D** $m\angle DEG$

1.16 In the diagram below, find a complimentary angle to $\angle FDG$

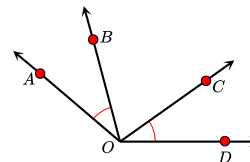


1.17 In the diagram below, find an angle supplementary to $\angle ABF$.

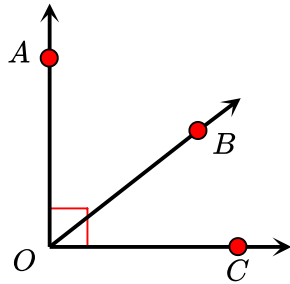


1.18 Two angles, $\angle A$ and $\angle B$, are complementary angles. The sum of their measures their measures angles is 52° greater than the difference between the measures of $\angle A$ and $\angle B$. Find the measure of each angle.

2.1 Find x and the measure of each of the angles using the diagram and that measures of the angles are $m\angle AOB = 3x + 11$, $m\angle BOC = 8x + 6$ and $m\angle COD = 5x - 5$.



- 2.2** Find the measure of each angle if $m\angle AOB = 8x - 4$ and $m\angle BOC = 5x + 3$.



- 2.3** The sum of the angle measures in a quadrilateral is 360° and in a pentagon it is 540° . Show that if an angle bisector is drawn in a regular pentagon it intersects the opposite side at a right angle.

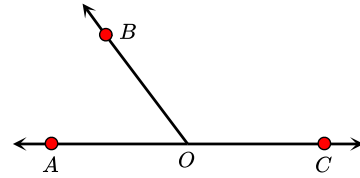
- 2.4** What is the angle between the hands of a clock when the time is

A 2 o'clock?

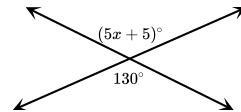
B half past 3?

- 2.5** $\angle A$ and $\angle B$ are supplementary angles. The measure of $\angle A$ is 36 more than the measure of $\angle B$. Find the measures of each angle.

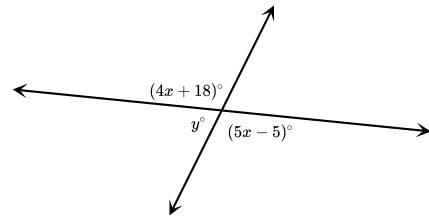
- 2.6** Find the measure of each angle if $m\angle AOB = 3x + 8$ and $m\angle BOC = 8x + 7$.



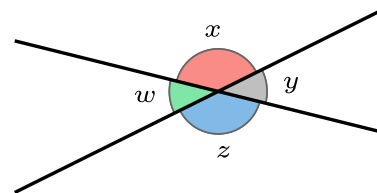
- 2.7** Use the diagram to find x .



- 2.8** Find x and y .



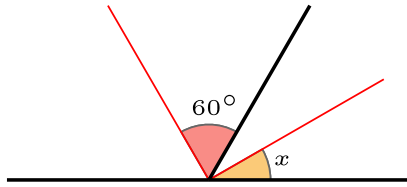
- 2.9** Two lines intersect each other and four angles are then formed.



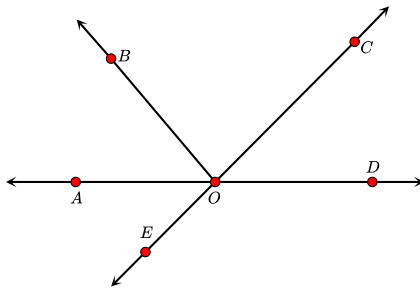
A What are the angle-pairs x and z and w and y called?

B Find the measure of each angle if $w = 31^\circ$.

- 2.10** In the figure, the thin red lines are angle bisectors. Find the measure of angle x .



- 2.11** If $m\angle AOB = 3x - 2$ and $m\angle AOE = 2x + 12$, find the value of x so that $\angle BOE$ is a right angle.



- 2.12** Find x if $\angle A$ and $\angle B$ are complements of each other and $m\angle A = 2x^\circ$, and $m\angle B = 4m\angle A$.

- 3.1** The sum of the measures of the interior angles in a quadrilateral is 360° . Show that the sum of the measures of the exterior angles, marked green in the diagram, also is 360° .

