

READY, SET, GO!

Name

Period

Date

**READY**

Topic: Symbols in Geometry

*Throughout the study of mathematics, you have encountered many symbols that help you write mathematical sentences and phrases without using words. Symbols help the mathematician calculate efficiently and communicate concisely.*

**Below is a set of common mathematical symbols. Your job is to match them to their definitions. Are the symbols logical?**

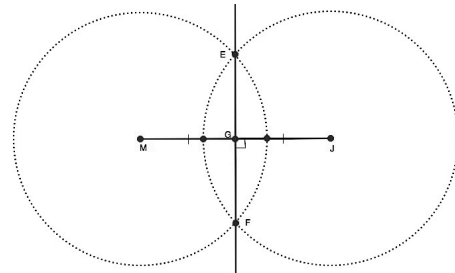
<u>Symbol</u>	<u>Definitions</u>
___1. =	A. <b>Absolute value</b> – it is always equal to the positive value of the number inside the lines. It represents distance from zero.
___2. $m\angle C$	B. <b>Congruent</b> – Figures that are the same size and shape are said to be congruent.
___3. $\overline{GH}$	C. <b>Parallel</b> – used between segments, lines, rays, or planes
___4. $\triangle ABC$	D. <b>Line segment with endpoints G and H.</b> Line segments can be congruent to each other. You would not say they were equal.
___5. $\perp$	E. <b>Ray GH</b> – The letter on the left indicates the endpoint of the ray.
___6. $\angle ABC$	F. Used when comparing numbers of <b>equal value</b> .
___7. $\overline{GH}$	G. <b>Plus or minus</b> – indicates 2 values, the positive value and the negative value
___8. $\cong$	H. <b>Triangle ABC</b>
___9. $\sim$	J. Indicates the <b>measure of an angle</b> . It would be set equal to a number.
___10. $\overline{GH}$	K. <b>Perpendicular</b> - Lines, rays, segments, and planes can all be perpendicular
___11. $\overline{GH}$	L. <b>Angle ABC</b> – The middle letter is always the vertex of the angle.
___12. $\parallel$	M. <b>Similar</b> – Figures that have been dilated are similar.
___13. $\pm$	N. <b>The length of GH.</b> It would equal a number.
___14. $ x $	P. Refers to the <b>infinite line GH</b> . Lines are not equal or congruent to other lines.

Need help? Visit [www.rsgsupport.org](http://www.rsgsupport.org)

**SET**

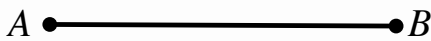
Topic: Construction of midpoint, perpendicular bisector, and angle bisector, using “givens” to solve problems.

The figure on the right demonstrates the construction of a perpendicular bisector of a segment.



Use the diagram to guide you in constructing the perpendicular of the following line segments. Mark the right angle with the correct symbol for right angles. Indicate the segments are congruent by using slash marks.

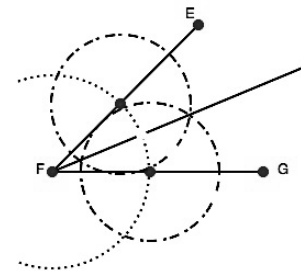
15.



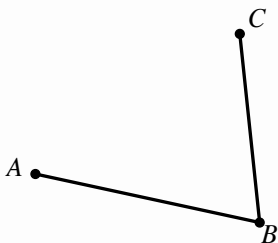
16.



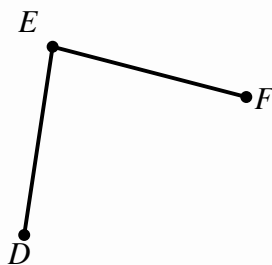
The figure on the right demonstrates the construction of an angle bisector. Use the diagram to guide you in constructing the angle bisector of the following angles. Mark your bisected angles as congruent.



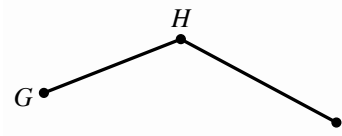
17.



18.



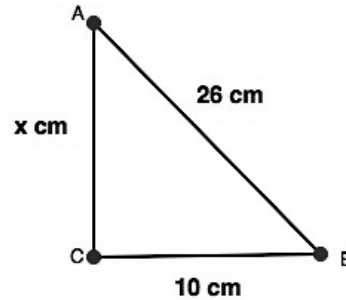
19.



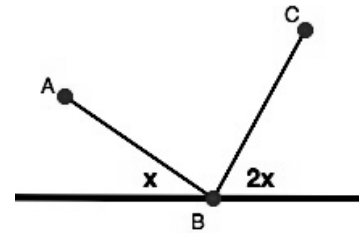
Need help? Visit [www.rsgsupport.org](http://www.rsgsupport.org)

Examine the diagram and add any information that you are given. Think how you can use what you have been given and what you know to answer the question. Plan a strategy for finding the value of  $x$ . Follow your plan. Justify each step.

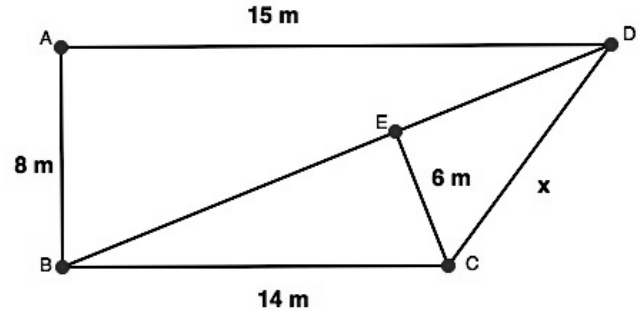
20. Given:  $m\angle C = 90^\circ$



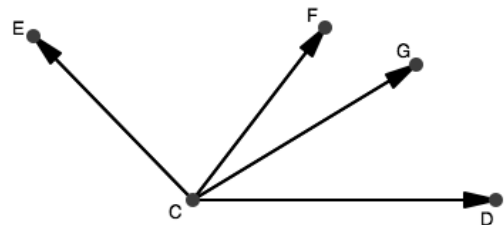
21. Given  $m\angle ABC = 90^\circ$



22. Given:  $\triangle BEC$ ,  $\triangle CED$ , and  $\triangle DAB$  are right triangles.



23. Given:  $\overline{CF}$  bisects  $\angle ECD$ ,  $m\angle ECF = 2x + 10$ , and  $m\angle FCD = 3x - 18$ . Find  $m\angle FCE$ .



Have you answered the question?

This problem asks you to do more than find the value of  $x$ .

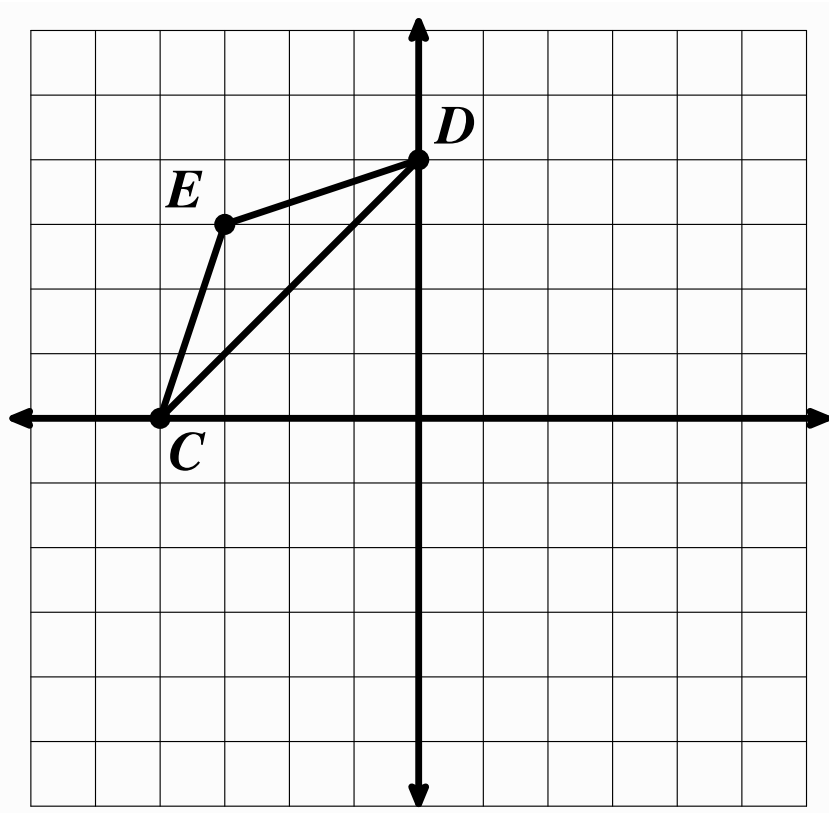
Need help? Visit [www.rsgsupport.org](http://www.rsgsupport.org)

**GO**

Topic: Translations, reflections, rotations

**Perform the following transformations on the diagram below.**

24. Label points C, E, D with the correct ordered pairs.
25. Translate  $\triangle CED$  down 4 and right 6. Label the image as  $\triangle C'E'D'$  and include the new ordered pairs.
26. Draw  $\overline{CC'}$ ,  $\overline{EE'}$ , and  $\overline{DD'}$ . What is the slope of each of these line segments?
27. Reflect  $\triangle CED$  across the  $x = 0$  line. Label the image  $\triangle C''E''D''$ . Include the new ordered pairs. Draw  $\overline{CC''}$  and  $\overline{EE''}$ . Why didn't you need to draw  $\overline{DD''}$ ? What is the relationship between  $\overline{CC''}$  and  $\overline{EE''}$  to the  $x = 0$  line?
28. Rotate  $\triangle CED$   $180^\circ$  about the point  $(-2, 0)$ . Label the image  $\triangle C'''E'''D'''$ . Include the new ordered pairs.



Need help? Visit [www.rsgsupport.org](http://www.rsgsupport.org)