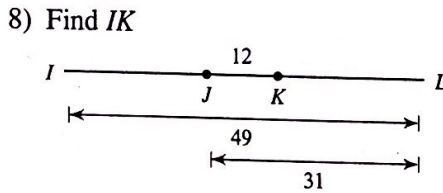
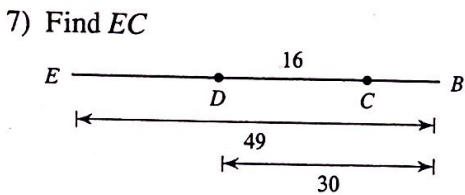
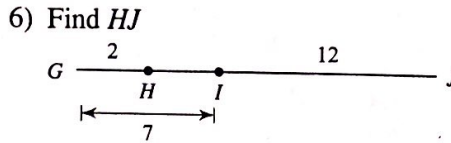
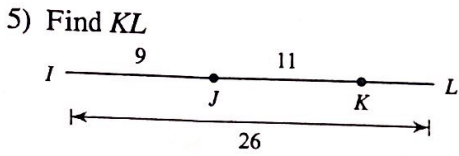
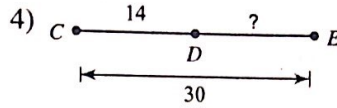
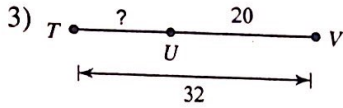
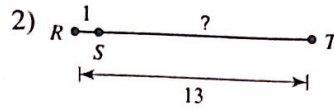
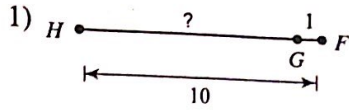


The Segment Addition Postulate

Find the length indicated.



Points A, B, and C are collinear. Point B is between A and C. Find the length indicated.

9) Find AC if $AB = 16$ and $BC = 12$.

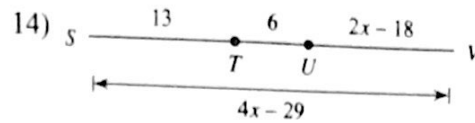
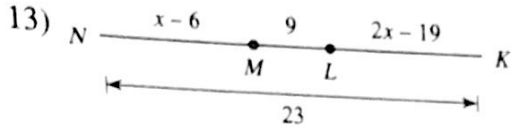
10) Find AC if $AB = 13$ and $BC = 9$.

Points A, B, and C are collinear. Point B is between A and C. Solve for x.

11) $AC = 3x + 3$, $AB = -1 + 2x$, and $BC = 11$.
Find x.

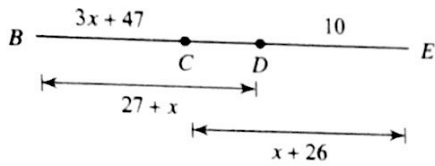
12) $AC = 22$, $BC = x + 14$, and $AB = x + 10$.
Find x.

Solve for x.

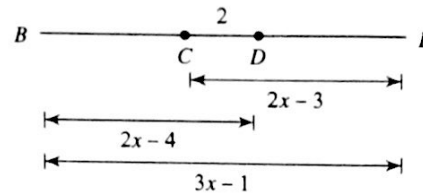


Find the length indicated.

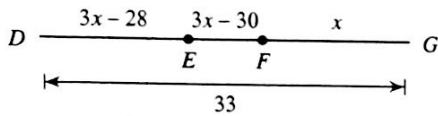
15) Find CE



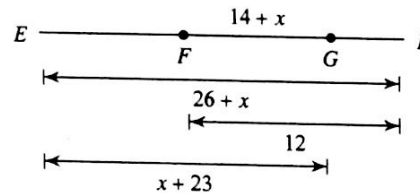
16) Find BD



17) Find DE



18) Find EG



Critical thinking questions:

19) Points A, B, C, D, and E are collinear and in that order. Find AC if $AE = x + 50$ and $CE = x + 32$.

20) Write a segment addition problem using three points (like question 11) that asks the student to solve for x but has a solution $x = 20$.

Practice Worksheet – Angle Bisectors

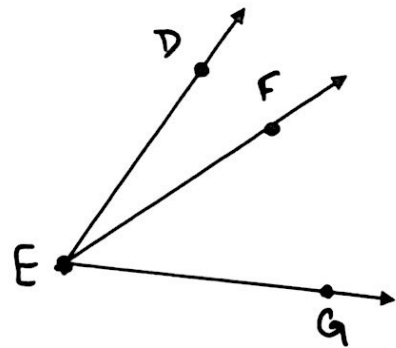
Geometry

For # 1-5, \overline{EF} bisects $\angle DEG$. (The diagram is not drawn to scale.)

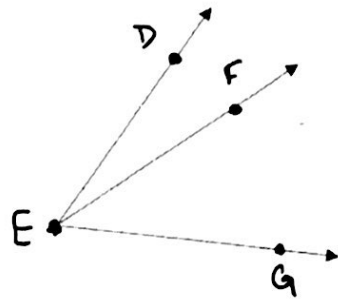
1. If $m\angle DEG = 88^\circ$, find $m\angle FEG =$ _____

2. If $m\angle FED = 27^\circ$, find $m\angle GED =$ _____

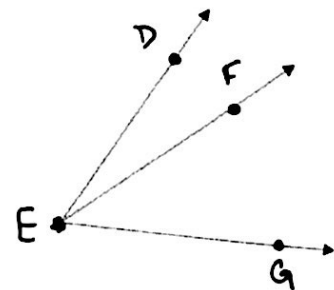
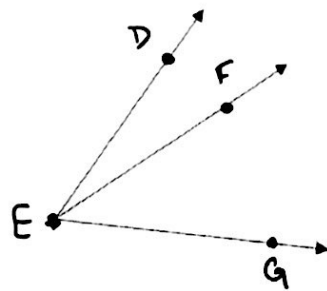
3. If $m\angle DEF = 3x+1$ and $m\angle DEG = 5x+19$, find the value of x .



4. If $m\angle DEF = 5x-3$ and $m\angle FEG = 2x+15$, find the value of x .

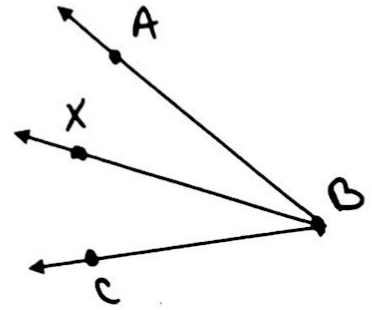


5. If $m\angle FEG = 6x-7$ and $m\angle FED = 2x+41$, find the $m\angle DEG$. (solve for x first!)

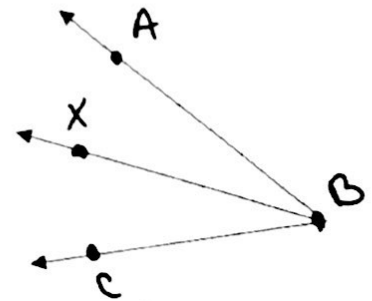


For #6-9, \overline{BX} is the **BISECTOR** of $\angle ABC$. (Diagrams are not drawn to scale)

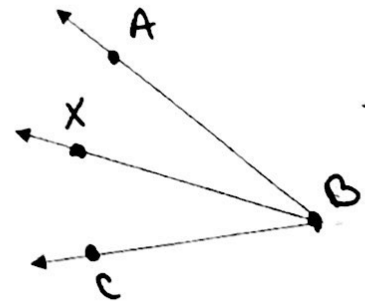
6. If $m\angle ABX = 5x$ and $m\angle XBC = 3x + 10$, find the $m\angle ABC$. (Solve for x first!)



7. If $m\angle ABC = 4x - 12$ and $m\angle ABX = 24$, find the value of x .



8. If $m\angle ABC = 4x + 16$ and $m\angle CBX = 3x + 6$, find the value of x .



9. If $m\angle ABC = 5x + 18$ and $m\angle CBX = 2x + 12$, find the value of x , and the $m\angle ABC$.

