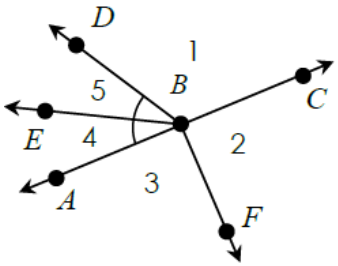
Name _____ **Ch. 1 Geometry Basics**

Date _____ **Period**_____ **1.4 Angle Addition Postulate**

1. Use the diagram below to complete each part.



* $\overrightarrow{BF} \perp \overleftrightarrow{AC}$

a. Name the vertex of $\angle 4$. _____

b. Name the sides of $\angle 1$. _____

c. Write another name for $\angle 5$. _____

d. Classify each angle:

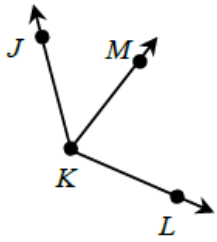
$\angle FBC$: _____ $\angle EBF$: _____ $\angle ABC$: _____

e. Name an angle bisector. _____

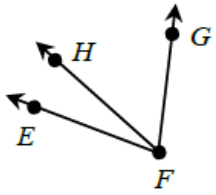
f. If $m\angle EBD = 36^\circ$ and $m\angle DBC = 108^\circ$, find $m\angle EBC$. _____

g. If $m\angle EBF = 117^\circ$, find $m\angle ABE$. _____

2. If $m\angle MKL = 83^\circ, m\angle JKL = 127^\circ$, and $m\angle JKM = (9x - 10)^\circ$, find the value of x.



3. If $m\angle EFH = (5x + 1)^\circ, m\angle HFG = 62^\circ$, and $m\angle EFG = (18x + 11)^\circ$, find each measure.

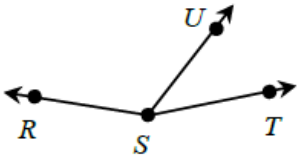


x = _____

$m\angle EFH$ = _____

$m\angle EFG$ = _____

4. If $m\angle RST = (12x - 1)^\circ, m\angle RSU = (9x - 15)^\circ$, and $m\angle UST = 53^\circ$, find each measure.

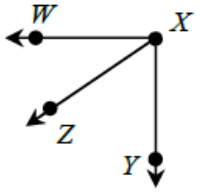


x = _____

$m\angle RST$ = _____

$m\angle RSU$ = _____

5. If $m\angle WXZ = (5x + 3)^\circ, m\angle ZXY = (8x - 4)^\circ$, and $\angle WXY$ is a right angle, find each measure.

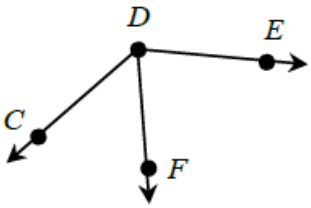


x = _____

$m\angle WXZ$ = _____

$m\angle ZXY$ = _____

6. If $m\angle CDF = (3x + 14)^\circ, m\angle FDE = (5x - 2)^\circ$, and $m\angle CDE = (10x - 18)^\circ$, find each measure.



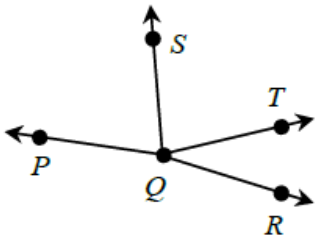
x = _____

$m\angle CDF$ = _____

$m\angle FDE$ = _____

$m\angle CDE$ = _____

7. If $\overrightarrow{QS}$ bisects $\angle PQT$, $m\angle SQT = (8x - 25)^\circ, m\angle PQT = (9x + 34)^\circ$, and $m\angle SQR = 112^\circ$, find each measure.



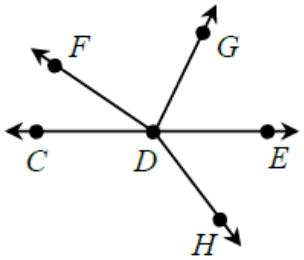
x = _____

$m\angle PQS$ = _____

$m\angle PQT$ = _____

$m\angle TQR$ = _____

8. If $\angle CDE$ is a straight angle, $\overrightarrow{DE}$ bisects $\angle GDH, m\angle GDE = (8x - 1)^\circ, m\angle EDH = (6x + 15)^\circ$, and $m\angle CDF = 43^\circ$, find each measure.



x = _____

$m\angle GDH$ = _____

$m\angle FDH$= _____

$m\angle FDE$ = _____