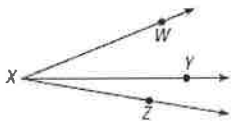
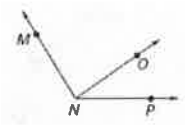
Name _____ Date _____

Angle Measurements

Name all angles in the figure.

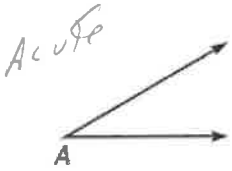
1. 

∠WXY
∠YXZ
∠WXZ

2. 

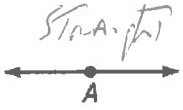
∠MNO
∠ONP
∠MNP

Classify each angle below.

3. 

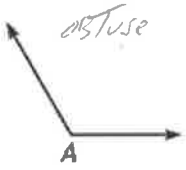
Acute

$0° < m\angle A < 90°$

4. 

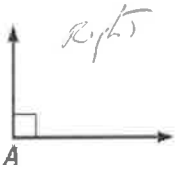
Straight

$m\angle A = 180°$

5. 

obtuse

$90° < m\angle A < 180°$

6. 

Right

$m\angle A = 90°$

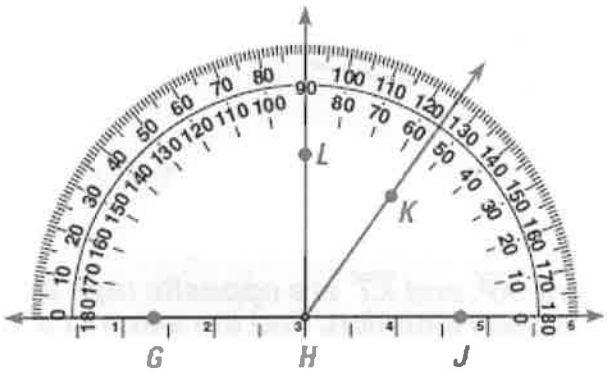
Use the diagram to determine the measure of the indicated angle.

7. ∠ KHJ 55°

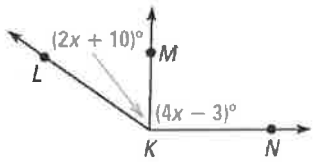
8. ∠ GHK 125°

9. ∠ GHJ 180°

10. ∠ GHL 90°



11. Given that m ∠LKN = 43,
find m ∠LKM and m∠ MKN



∠LKM = 22

∠MKN = 21

43 ✓

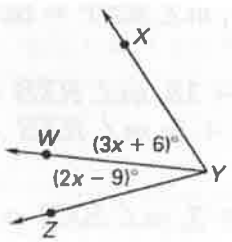
$(2x+10) + (4x-3) = 43$

$6x + 7 = 43$

$6x = 36$

$x = 6$

12. Given that m ∠XYZ = 72,
find m ∠XYW and m∠ ZYW



$(3x+6) + (2x-9) = 72$

$5x - 3 = 72$

$5x = 75$

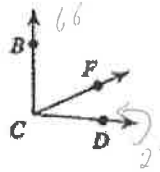
$x = 15$

∠XYW = 51

∠ZYW = 21

72 ✓

13. $m\angle FCD = x + 41$, $m\angle BCF = x + 78$, and $m\angle BCD = 95°$. Find x.



66

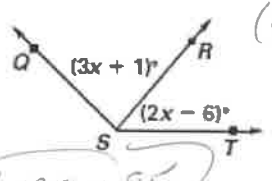
$(x+41) + (x+78) = 95$

$2x + 119 = 95$

$2x = -24$

$x = -12$

14. Given $m\angle QST = 135°$, find $m\angle QSR$.



$(3x+1) + (2x-6) = 135$

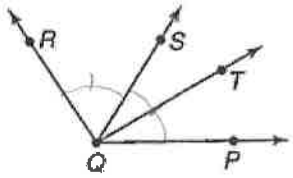
$5x - 5 = 135$

$5x = 140$

$x = 28$

$\angle QSR = 85$

15. In the figure at the right, if $\overrightarrow{QS}$ bisects $\angle RQP$, $m\angle RQS = 2x + 10$, and $m\angle SQP = 3x - 18$, find $m\angle SQR$.



$2x + 10 = 3x - 18$

$28 = x$

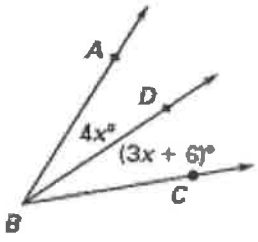
$\angle SQR = 66$

In the diagram, $\overline{BD}$ bisects $\angle ABC$. Find $m\angle ABC$.

$5x - 11 = 4x + 1$

$x = 12$

16.

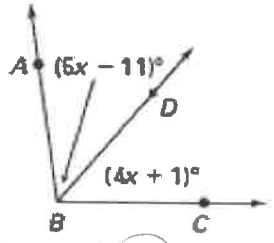


$4x = 3x + 6$

$x = 6$

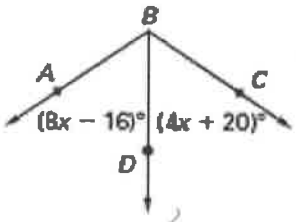
$\angle ABC = 48$

17.



$\angle ABC = 98$

18.



$8x - 16 = 4x + 20$

$4x = 36$

$x = 9$

$\angle ABC = 112$

In the figure, $\overrightarrow{XP}$ and $\overrightarrow{XT}$ are opposite rays and $\overrightarrow{XQ}$ bisects $\angle PXS$. For each situation, find the value of x and the measure of the indicated angle.

19. $m\angle SXT = 4x + 1$, $m\angle QXS = 2x - 2$, $m\angle QXT = 125$; $m\angle QXS$

$4x + 1 + 2x - 2 = 125$

$6x - 1 = 125$

$6x = 126$

$x = 21$

$\angle QXS = 40$

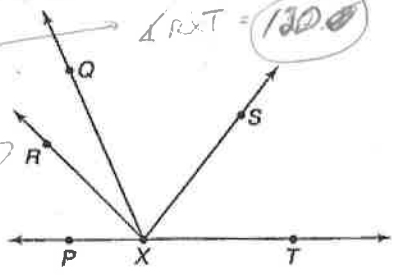
20. $m\angle PXR = 3x$, $m\angle RXT = 5x + 20$, $m\angle RXT$

$3x + 5x + 20 = 180$

$8x = 160$

$x = 20$

$\angle RXT = 120$



21. $m\angle RXQ = x + 15$, $m\angle RXS = 5x - 7$, $m\angle QXS = 3x + 5$; $m\angle RXS$

$x + 15 + 3x + 5 = 5x - 7$

$4x + 20 = 5x - 7$

$27 = x$

$= 128$

22. $m\angle TXS = x + 3$, $m\angle SXR = 2x + 9$, $m\angle RXP = 4x - 7$; $m\angle PXS$

$x + 3 + 2x + 9 + 4x - 7 = 180$

$7x + 5 = 180$

$7x = 175$

$x = 25$

$\angle PXS = 93 + 59$

$= 152$

23. $m\angle RXQ = 2x + 7$, $m\angle RXP = 3x - 11$, $m\angle PXS = x + 37$; $m\angle QXS$

$2(2x + 7 + 3x - 11) = x + 37$

$2(5x - 4)$

$10x - 8 = x + 37$

$9x = 45$

$x = 5$

$\angle QXS = 21$