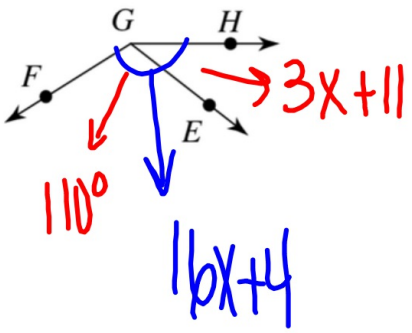
1. $m\angle HGF = 16x + 4$, $m\angle EGF = 110°$, and $m\angle HGE = 3x + 11$. Find x.



$3x+11+110 = 16x+4$

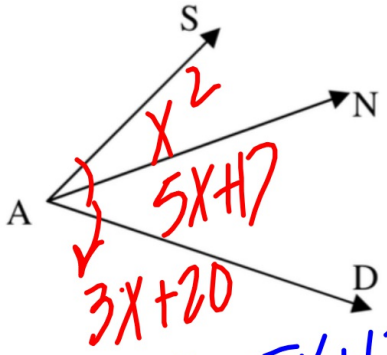
$3x+121 = 16x+4$

$121 = 13x+4$

$117 = 3x$

$x = 9$

2. Find the value(s) of x in the given diagram if $\measuredangle SAN = x^2$, $\measuredangle DAN = 5x+17$, and $\measuredangle SAD = 3x+20$



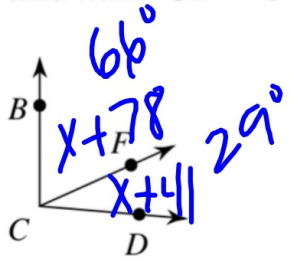
$x^2+5x+17 = 3x+20$

$x^2+2x-3 = 0$

$(x+3)(x-1) = 0$

$x = -3, 1$

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



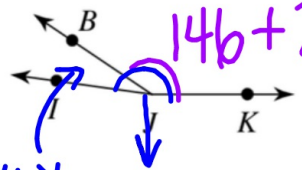
66°
x+78
29°
x+41

$x + 41 + x + 78 = 95$

$2x + 119 = 95$

$x = -12$

4. Find x if $m\angle BJK = 146 + 2x$, $m\angle IJK = 172°$, and $m\angle IJB = 2x + 26$.



146+2x
2x+26
172

$146 + 2x + 2x + 26 = 172$

$172 + 4x = 172$

$x = 0$

Answers to HW #6

15. $\angle AOB$ or $\angle DOC$
16. $\angle EOC$
17. $\angle EOC$
18. $\angle DOC$ or $\angle AOB$

19. $\angle AOB$ and $\angle DOC$ or $\angle BOC$ and $\angle AOD$
20. 90
21. 30
22. 150

23. 30
24. True; the markings show they are congruent.

25. No; there are no markings.
26. Yes; you can conclude that the angles are adjacent and supplementary from the diagram.

27. No; there are no markings.
28. Yes; you can conclude that angles are supplementary from the diagram.

29. Yes; there are markings.
30. No; there are no markings.

31. Yes; you can conclude that the angles are vertical from the diagram.

32. No; there are no markings.

Name an angle or angles in the diagram described by each of the following.

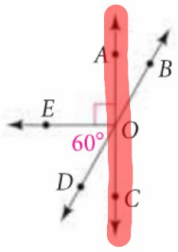
15. supplementary to $\angle AOD$

16. adjacent and congruent to $\angle AOE$

17. supplementary to $\angle EOA$

18. complementary to $\angle EOD$

19. a pair of vertical angles



In the diagram above, find the measure of each of the following angles.

20. $\angle EOC$ **21.** $\angle DOC$ **22.** $\angle BOC$ **23.** $\angle AOB$

Can y

24. ∠

25. ∠

26. ∠ a

27. *m*

28. *m*

29. $\overline{A}$

31. ∠

Yesterday's Notes

6) $\overrightarrow{KH}$ bisects $\angle JKL$. If $m\angle JKH = 6x+3$ and $m\angle HKL = 8x-7$, find $m\angle JKL$.

$X = 5$

$m\angle JKL = 66$

Objective 2: Identifying Angle Pairs

Some pairs of angles have special names. These names need to be memorized, as we will see them throughout the year.

vertical angles

$\cong$

two angles whose sides are opp rays

adjacent angles

angles next to each other

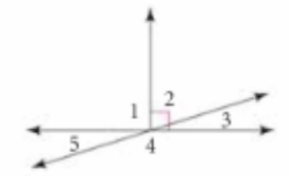
complementary angles

their $\angle$ measures sum 90°

supplementary angles

measures $= 180°$

Example 7: In the diagram identify pairs of numbered angles that are related as follows:



A) complementary ∠2 & ∠3

B) supplementary ∠4 & ∠5, ∠3 & ∠4

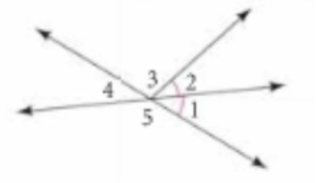
C) vertical ∠3 & ∠5

QC: Use the photo below to answer parts A) and B)

A) Name two pairs of adjacent angles in the photo. ∠AFB & ∠BFC, ∠FCD & ∠EFD

B) If $m\angle EFD = 27°$ find $m\angle AFD$. $= 153°$

Example 8: What can you conclude from the information in the diagram?



∠1 & 2 are ≅ based on marking

∠1 & ∠4 are vertical

∠1 & ∠5 are supplementary

QC: Can you make each conclusion from the information in the diagram? Explain.

A) $\overline{TW} \cong \overline{WV}$ yes they're marked

B) $\overline{PW} \cong \overline{WQ}$ NO.

C) $\overline{TV} \perp \overline{PQ}$ NO; No markings

D) $\overline{TV}$ bisects $\overline{PQ}$ No. no markings

E) W is the midpoint of $\overline{TV}$

$\overline{TW} \cong \overline{WV}$