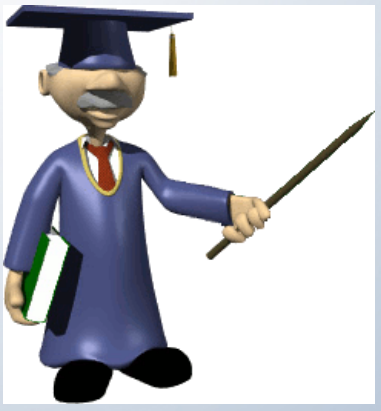
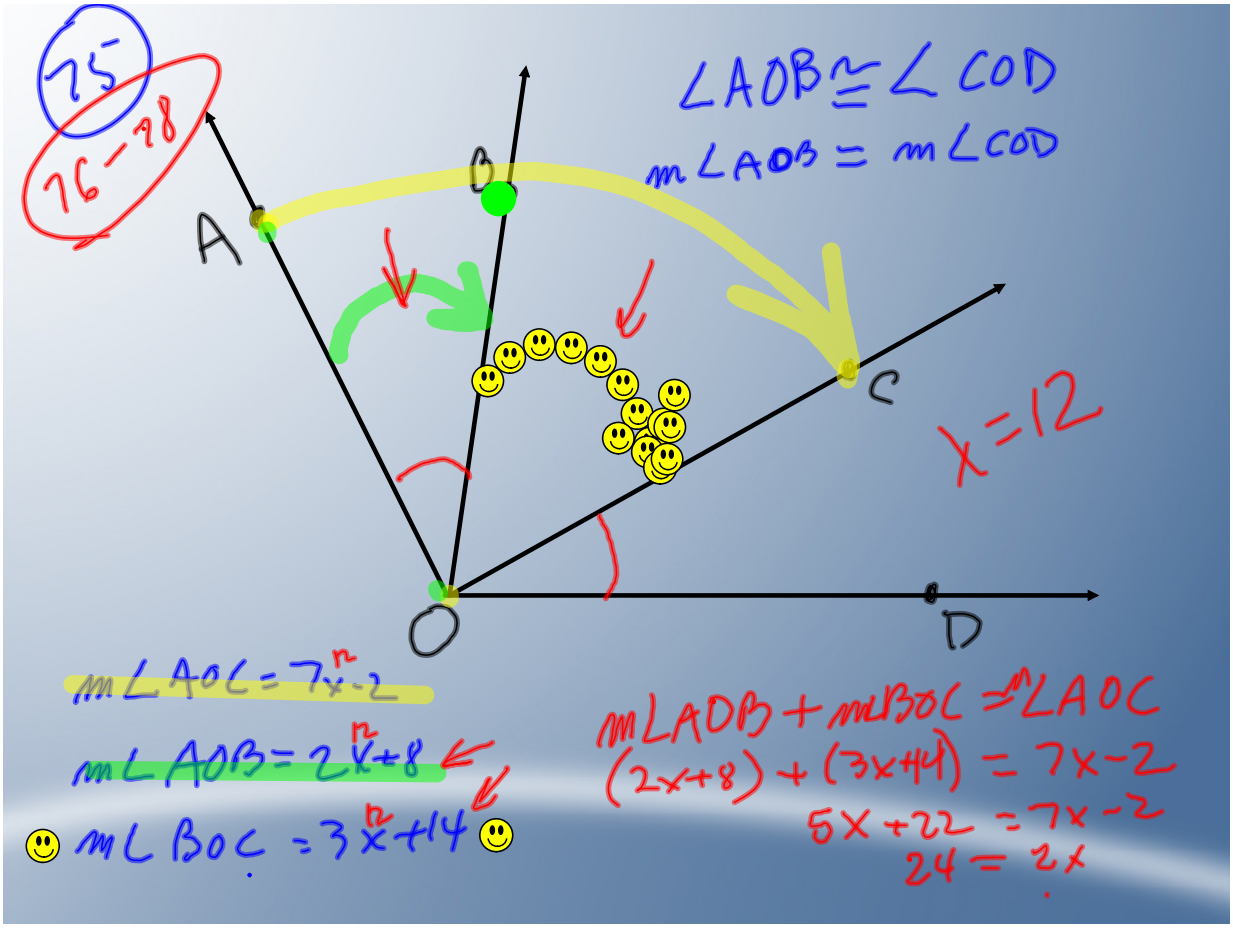
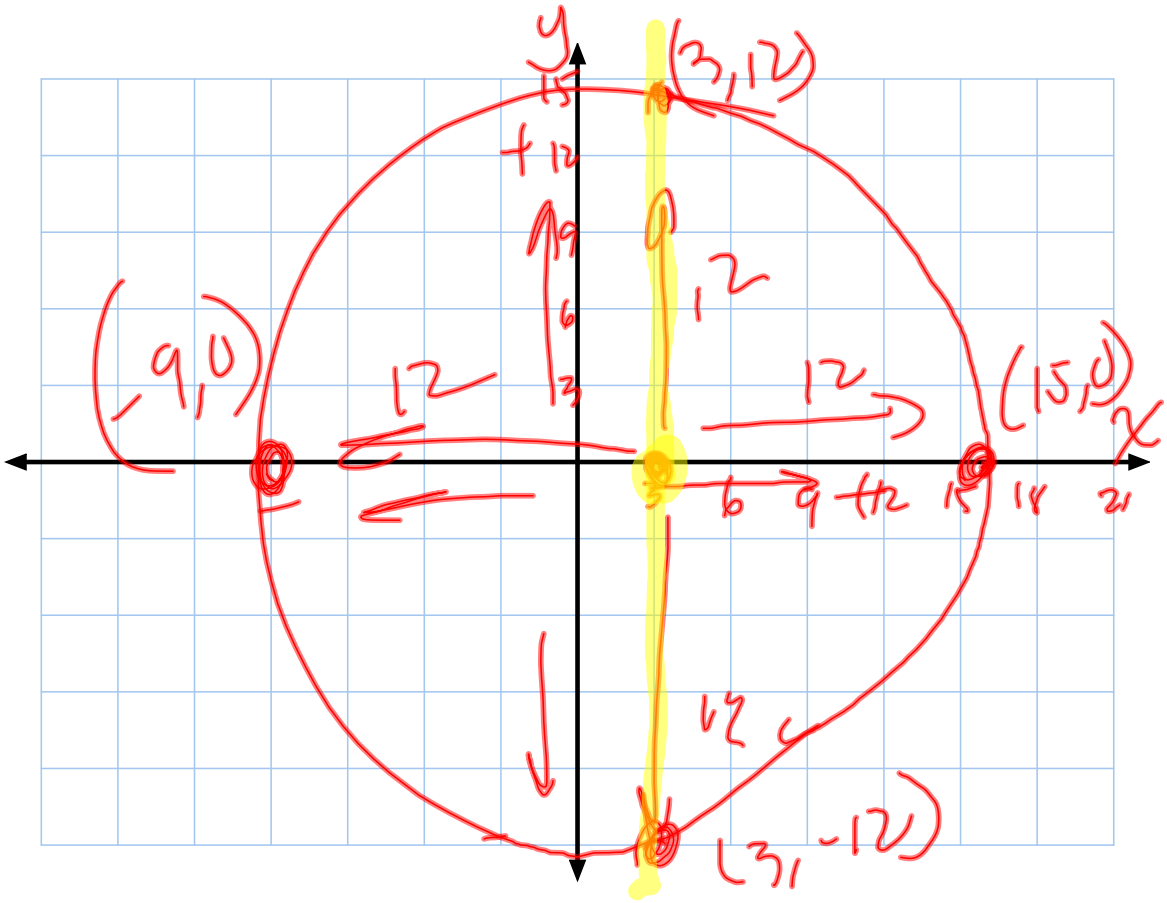
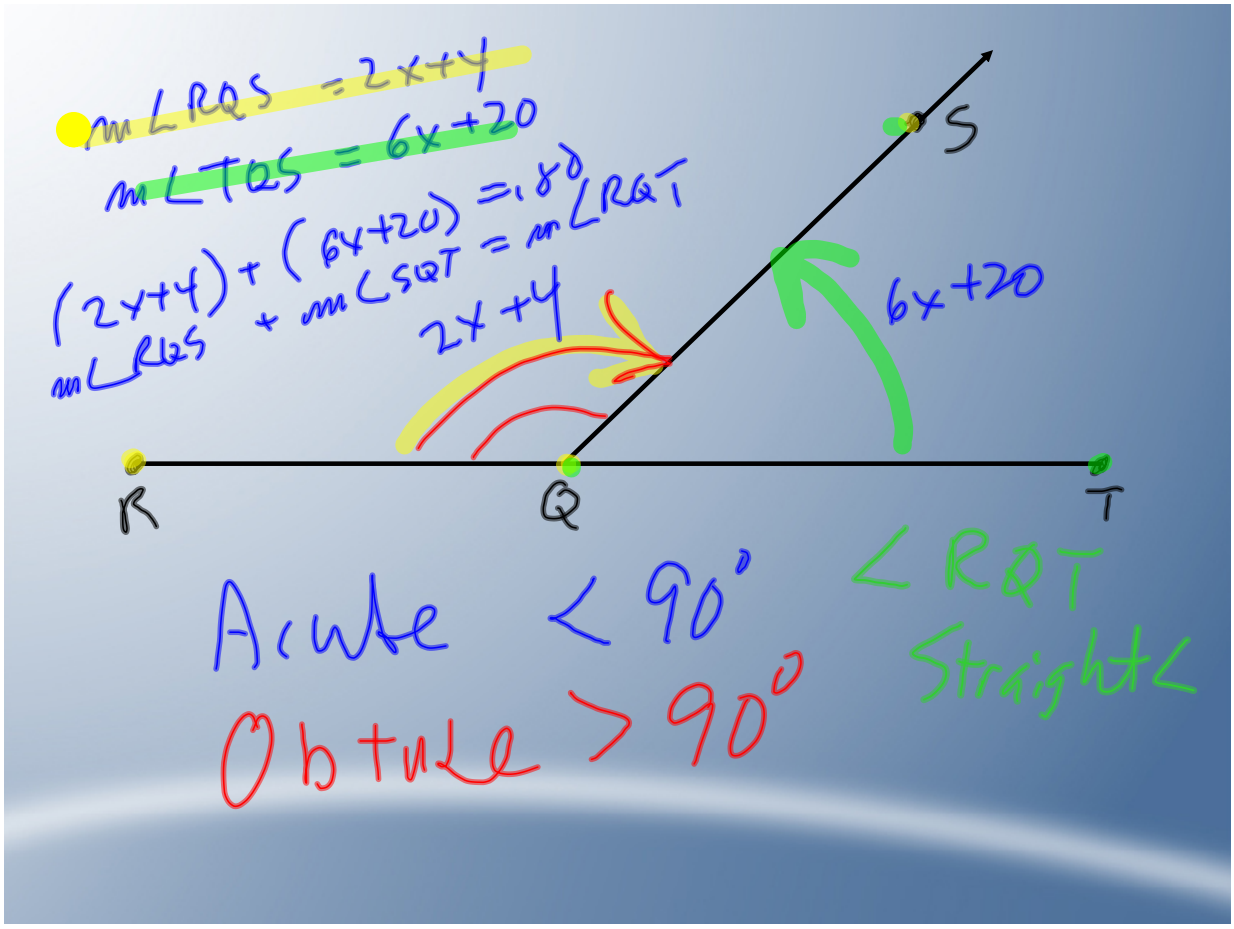


# Warm-up exercises...

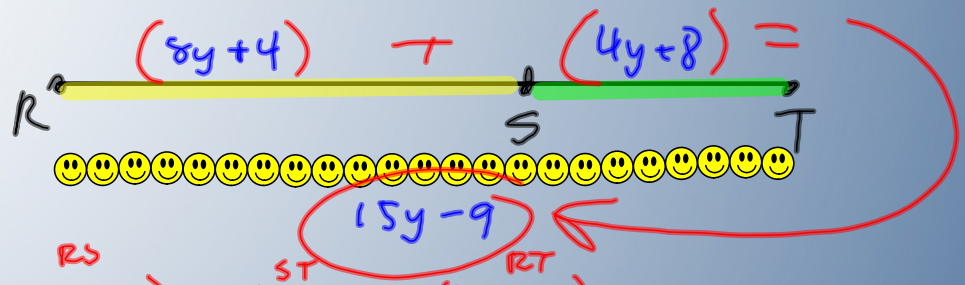
p. 34 #1-9 (top of page)




y
x
(3,12)
(-9,0)
(15,0)
(3,-12)
12
12
12
12
3
6
9
12
15
18
21


m∠RQS = 2x+4
m∠TQS = 6x+20
(2x+4) + (6x+20) = 180
m∠RQS + m∠SQT = m∠RQT
2x+4
6x+20
S
R
Q
T
Acute < 90°
Obtuse > 90°
∠RQT
Straight ∠

11




RS + ST = RT

(8y+4) + (4y+8) = (15y-9)

RS + ST = RT

Length seg RS

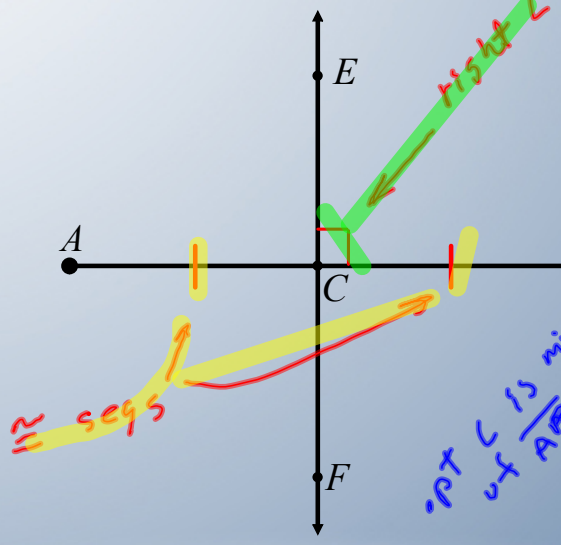
Length seg ST

Length seg RT

---

**What statements can you make...**

**What conclusions can you draw...**



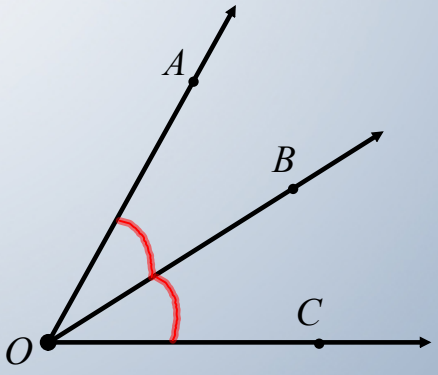

- All ∠'s right ∠'s i.e. $m\angle ECB = 90$
- Lines are ⊥ meet at rt ∠'s "perpendicular"

$\overleftrightarrow{EF} \perp \overline{AB}$

- $\overline{AC} \cong \overline{CB}$ or $AC = CB$
- $AC + CB = AB$
- Can't say $\overline{EC} \cong \overline{CF}$ no markings
- $\overleftrightarrow{EF}$ bisects $\overline{AB}$ cuts in ½
- pt C is midpt of $\overline{AB}$

***What statements can you make...***

***What conclusions can you draw...***




3 ∠'s : ∠AOB ∠BOC ∠AOC

$m\angle AOB = m\angle BOC$

$\angle AOB \cong \angle BOC$

$m\angle AOB + m\angle BOC = m\angle AOC$

$\overrightarrow{OB}$ bisects $\angle AOC$

cuts in $\frac{1}{2}$

***Constructions ... the tools***

- Compass
  - Measure distance
  - Marks an arc / circle

- Straight-edge
  - ***NOT*** used as a ruler to measure
  - Simply used to draw a segment / line


- Protractor
  - ***NOT*** used to draw / construct angles
  - Only used to verify the measure of a constructed angle after construction

***Basic Constructions ... you will construct a:***

1) ≅ seg (to a given segment)

2) ≅ ∠ (to a given ∠)

3) ∠ bis. (to a given ∠)

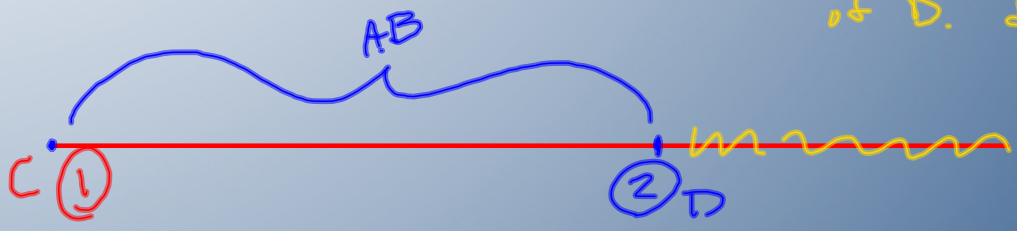
4) ⊥ bis. (of a given seg)

Construct $\overline{CD} \cong \overline{AB}$

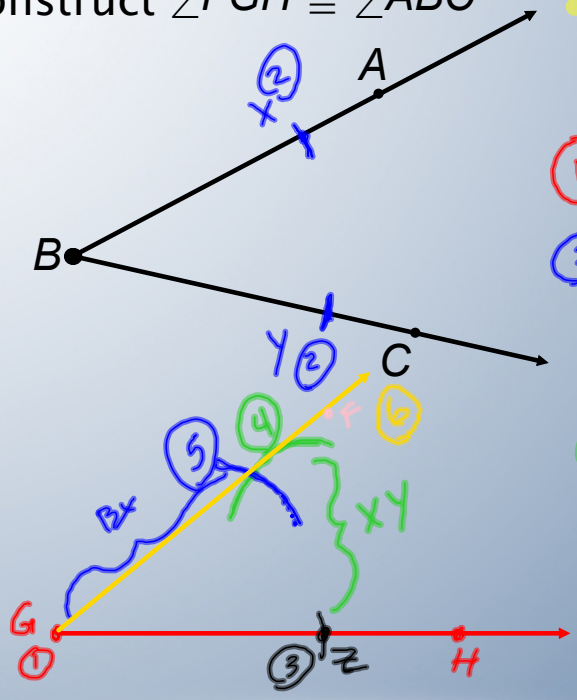

① Draw segment longer than $\overline{AB}$ Label left end C

② Measure w/ compass distance A → B. Mark on new segment from one end. Label D.

③ erase to right of D. done!



## Construct $\angle FGH \cong \angle ABC$

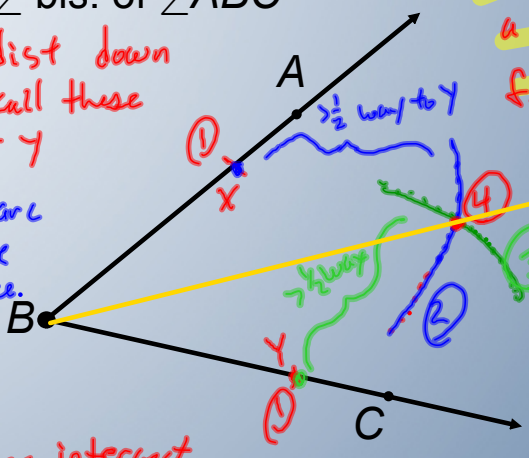



Need to figure out how wide open the ∠ is in a repeatable way

1. Draw ray $\overrightarrow{GH}$ for the bottom side of the new ∠.
2. Mark same distance down each side. Call these pts X, Y
3. Mark dist BX on $\overrightarrow{GH}$ from G. call this pt Z.
4. Measure XY; arc above $\overrightarrow{GH}$ from Z
5. Measure BX, arc across (4) arc from G.
6. Connect intersection of arcs w/ G. Done!

## Construct the ∠ bis. of $\angle ABC$

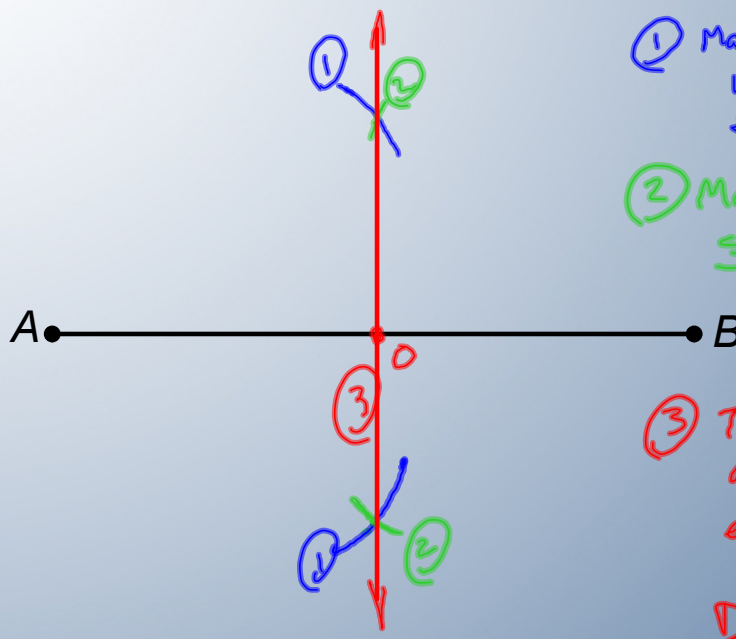
1. Mark same dist down each side ... call these pt X and pt Y
2. From X make arc toward Y more than ½ distance.
3. Do same from Y toward X.
4. Where the arcs intersect is equidistant from sides of the angle!




Need to find a point equidistant from the sides of the ∠.

5. connect pt B and pt (4) ... this is the ∠ bisector

Construct the ⊥ bis. of $\overline{AB}$




Have a straight ∠ here... bisect it to get 90° ∠.

① Make arc above & below more than ½ across from one endpt

② Make arc above & below same dist but from other end pt.

③ The 2 intersection pts are equidistant from endpts of AB... connect them. Check if rt ∠ Done! & if AO = OB

## L1.5 HW Problems

Pg 37, #1-15, 21, 25, 27-35