

#1.

a Name in all possible ways, the line containing A, R, and D.

$\overleftrightarrow{AR}, \overleftrightarrow{AD}, \overleftrightarrow{RA}, \overleftrightarrow{DA}, \overleftrightarrow{RD}, \overleftrightarrow{DR}$

b Name the sides of  $\angle ABC$ .

$\overline{AB}, \overline{BC}$

c What side do  $\angle 2$  and  $\angle 4$  have in common?

$\overline{DF}$

d Name the horizontal ray with endpoint C.

$\overrightarrow{CB}$

e Estimate the measures of  $\angle BAD$ ,  $\angle 2$ , and  $\angle ABC$ .

$60^\circ, 70^\circ, 120^\circ$

f Are angles FCD and DCE different angles?

No (the angle is the 'opening' between the sides. It doesn't matter how long sides are - same angle)

g Which angle in the figure is  $\angle B$ ?

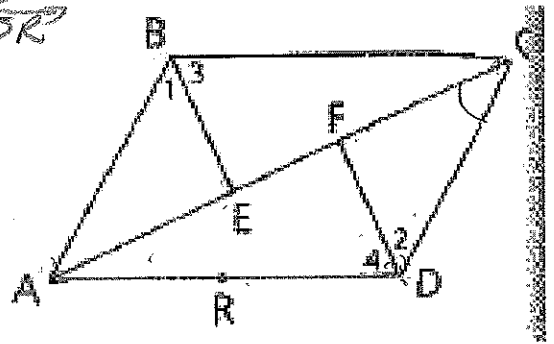
No single angle

h  $\overline{EC} \cup \overline{FA} = \overline{EA}$

i  $\overline{EC} \cap \overline{FA} = \overline{EF}$

j  $\overline{BA} \cup \overline{BE} = \angle 1$  or  $\angle ABE$

k  $\overline{AC} \cap \overline{DR} = A$



#2.

a Change  $46\frac{3}{4}^\circ$  to degrees and minutes.

$46^\circ 45'$

b Change  $132^\circ 20'$  to degrees.

$\frac{20}{60} = \frac{2}{6} = \frac{1}{3}$   $132\frac{1}{3}^\circ$

#3.

If  $\angle A \cong \angle B$  find  $m\angle A$

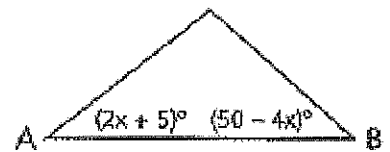
$$2x + 5 = 50 - 4x$$

$$6x + 5 = 50$$

$$6x = 45$$

$$x = \frac{45}{6}$$

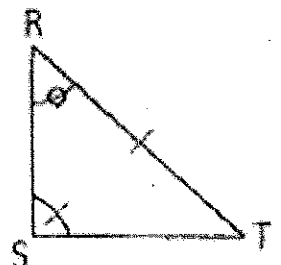
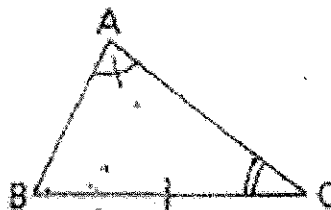
$$m\angle A = 2\left(\frac{45}{6}\right) + 5 = \frac{45}{3} + 5 = 15 + 5 = 20^\circ$$



#4.

a According to the diagram, which two segments are congruent?  $\overline{BC} \cong \overline{RT}$

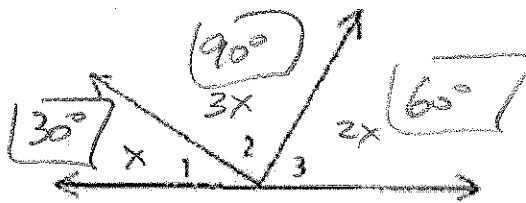
b According to the diagram, which two angles are congruent?  $\angle A \cong \angle S$



5.

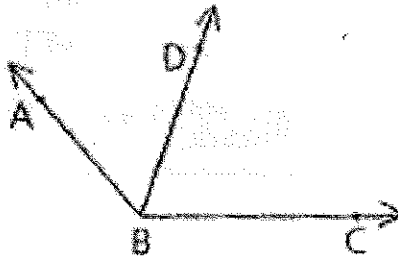
The measures of  $\angle 1$ ,  $\angle 2$ , and  $\angle 3$  are in the ratio 1:3:2. Find the measure of each angle.

$$\begin{aligned} x + 3x + 2x &= 180 \\ 6x &= 180 \\ x &= 30 \end{aligned}$$



#6.

Given:  $\angle ABC = 130^\circ$ ,  
 $\angle ABD = 60^\circ$   
 Prove:  $\angle DBC$  is acute.



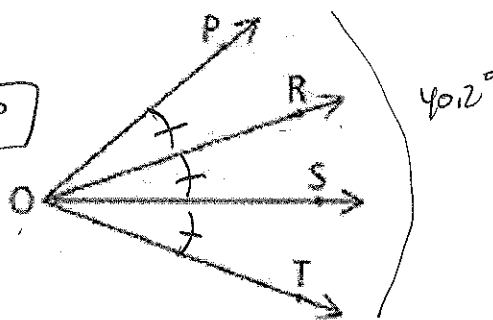
Statements	Reasons
1 $\angle ABC = 130^\circ$	1 Given
2 $\angle ABD = 60^\circ$	2 Given
3 $\angle DBC = 70^\circ$	3 subtraction prop. ( $m\angle DBC = m\angle ABC - m\angle ABD$ )
4 $\angle DBC$ is acute	4 $0^\circ < m\angle DBC < 90^\circ$

#7. Given:  $\overrightarrow{OR}$  and  $\overrightarrow{OS}$  trisect  $\angle TOP$ .

$$\angle TOP = 40.2^\circ$$

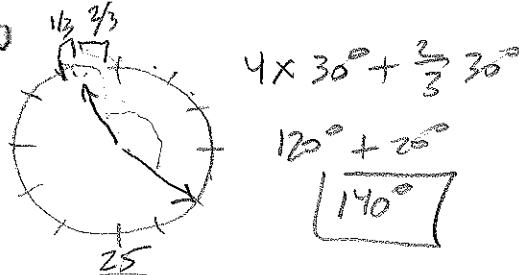
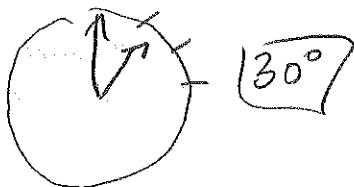
$$\text{Find: } m\angle POR = \frac{1}{3}(40.2) = 13.4^\circ$$

$$\begin{array}{r} 13.4 \\ 3 \overline{) 40.2} \\ \underline{3} \phantom{0} \\ 10 \phantom{2} \\ \underline{9} \phantom{2} \\ 12 \phantom{2} \\ \underline{9} \phantom{2} \\ 32 \phantom{2} \\ \underline{30} \phantom{2} \\ 22 \phantom{2} \\ \underline{21} \phantom{2} \\ 12 \phantom{2} \\ \underline{12} \phantom{2} \\ 0 \phantom{2} \end{array}$$



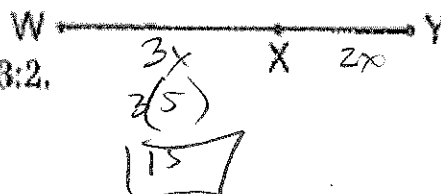
#8. Find the angle formed by the hands of a clock at each time.

a 1:00      hr sector =  $\frac{360^\circ}{12} = 30^\circ$       b 11:20



#9.

Given:  $WY = 25$ ;  
 The ratio of  $WX$  to  $XY$  is 3:2.  
 Find:  $WX$



$$\begin{aligned} 3x + 2x &= 25 \\ 5x &= 25 \\ x &= 5 \end{aligned}$$

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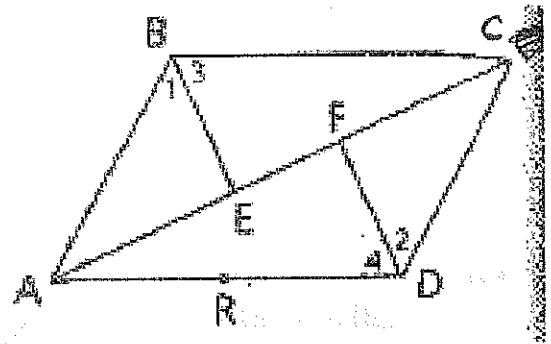
g Which angle in the figure is  $\angle B$ ?

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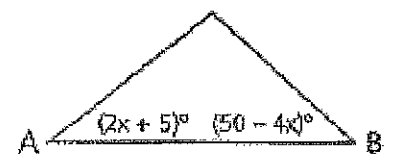


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b Change  $132^\circ 20'$  to degrees.

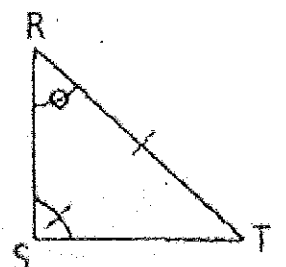
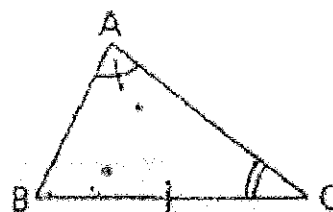
#3. Given  $\triangle ABC$  with  $\angle A \cong \angle B$

If  $\angle A \cong \angle B$  find  $m\angle A$



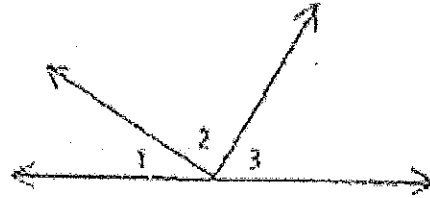
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b According to the diagram, which two angles are congruent?



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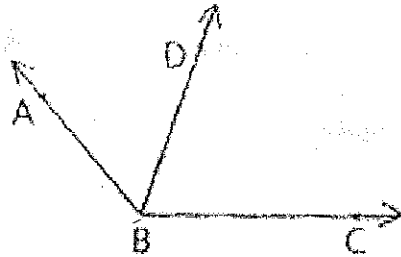


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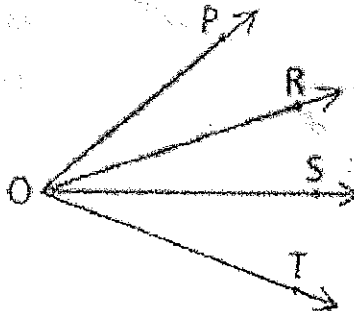
Prove:  $\angle DBC$  is acute.



Statements	Reasons
1 $\angle ABC = 130^\circ$	1 _____
2 $\angle ABD = 60^\circ$	2 _____
3 $\angle DBC = 70^\circ$	3 _____
4 $\angle DBC$ is acute	4 _____

#7. Given:  $\overrightarrow{OR}$  and  $\overrightarrow{OS}$  trisect  $\angle TOP$ .  
 $\angle TOP = 40.2^\circ$

Find:  $m\angle POR$



#8. Find the angle formed by the hands of a clock at each time.

a 1:00

b 11:20

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