

NAME _____
 Ms. Kresovic
 Advanced Geometry , period ____
 23 August 2013

Measurement of Segments and Angles (1.2) and Collinearity, Betweenness, and Assumptions (1.3)

1.2:

Problem Set A

1 Change each of the following to degrees and minutes.

a $61\frac{2}{3}^\circ$

b 71.7°

2 Change each of the following to degrees.

a $132^\circ30'$

b $19^\circ45'$

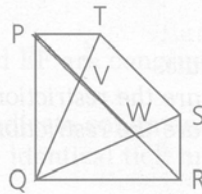
4 a $\overrightarrow{QV} \cap \overleftrightarrow{TS} = \underline{\hspace{1cm}} ?$

b $\overline{WP} \cap \overline{VR} = \underline{\hspace{1cm}} ?$

c $\overrightarrow{WP} \cup \overrightarrow{VR} = \underline{\hspace{1cm}} ?$

d $\overrightarrow{SQ} \cup \overrightarrow{SR} = \underline{\hspace{1cm}} ?$

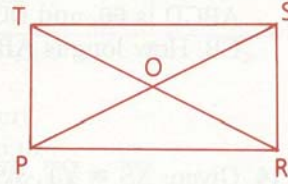
e How many angles have vertex Q?



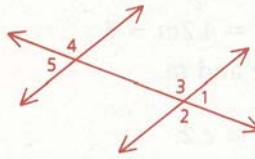
5 a Evaluate $49^\circ32'55'' + 37^\circ27'15''$.

b Evaluate $123^\circ15' - 40^\circ26'$.

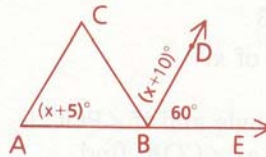
- 6 There is a right angle at each corner of PRST. (Later in the course you will learn that PRST is a rectangle.)
- If $\angle TPO = 60^\circ$, how large is $\angle RPO$?
 - If $\angle PTO = 70^\circ$, how large is $\angle STO$?
 - If $\angle TOP = 50^\circ$, how large is $\angle POR$?
 - Classify $\angle TOS$ as acute, right, or obtuse.



- 7
- Which angle appears to have the same measure as $\angle 1$?
 - Which angle appears larger, $\angle 2$ or $\angle 3$?
 - Does $\angle 3$ appear to be congruent to $\angle 4$ or to $\angle 5$?



- 8 If $\angle CBD \cong \angle DBE$, find $m\angle A$.



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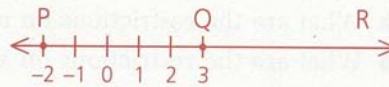
9 Find the measure of the angle formed by the hands of a clock at each time.

- a 3:00 b 4:30 c 7:20 d 1:45

10 a Find PQ.

b If R's coordinate is 7, why is $\overline{PQ} \neq \overline{QR}$?

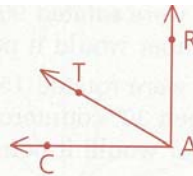
c What must the coordinate of R be in order for Q to be the midpoint of \overline{PR} ?



11 Given: $\angle CAR$ is a right angle.

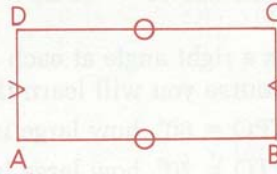
$$m\angle CAT = 37^\circ 66' 10''$$

Find: $m\angle RAT$

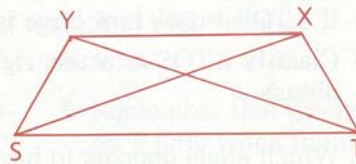


Problem Set B, continued

- 13 The perimeter of (the distance around) $ABCD$ is 66, and \overline{DC} is twice as long as \overline{CB} . How long is \overline{AB} ?



- 14 Given: $\overline{XS} \cong \overline{YT}$, $\overline{YS} \cong \overline{XT}$,
 $XT = 2r + 5$,
 $XS = 3m + 7$,
 $YS = 3\frac{1}{2}r + 2$,
 $YT = 4.2m + 5$



Solve for r and m .

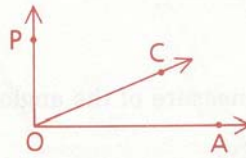
- 15 Given: $\angle 1 \cong \angle 2$,
 $m\angle 1 = x + 14$,
 $m\angle 2 = y - 3$

Solve for y in terms of x .

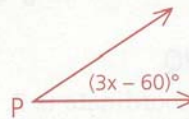


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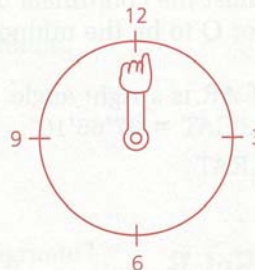
- 16** If $\angle POA$ is a right angle and if $\angle POC$ is three times as large as $\angle COA$, find $m\angle POC$.



- 17** $\angle P$ is acute.
a What are the restrictions on $m\angle P$?
b What are the restrictions on x ?



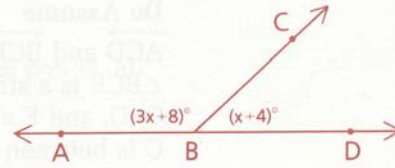
- 18** The hand is at 12 on the clock.
a If the hand were rotated 90° clockwise, at what number would it point?
b If the hand were rotated 150° clockwise and then 30° counterclockwise, at what number would it point?



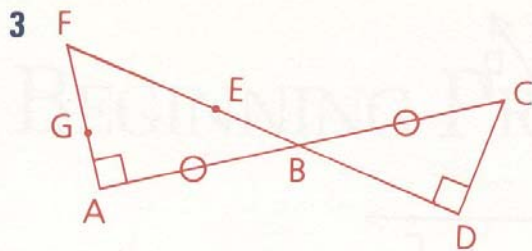
1.3:

Problem Set A

- 1 Find $m\angle ABC$ (the measure of $\angle ABC$).

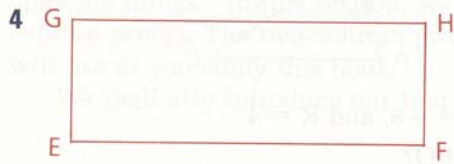


- 2 Draw a diagram showing four points, no three of which are collinear.



- 3
- Name all points collinear with E and F.
 - Are G, E, and D collinear? Are F and C collinear?
 - Which two segments do the tick marks indicate are congruent?
 - Is $\angle A \cong \angle D$?
 - Is $\angle F \cong \angle ABF$?
 - Where do \overleftrightarrow{AC} and \overleftrightarrow{FE} intersect?
 - $\overline{AG} \cap \overline{GF} = \underline{\hspace{1cm}}?$
 - $\overline{AG} \cup \overline{GF} = \underline{\hspace{1cm}}?$
 - B lies on a ray whose endpoint is E. Name this ray in all possible ways.
 - Name all points between F and D.

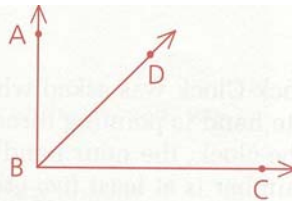
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- a Should we assume that angles E, F, G, and H are right angles?
 Explain your answer.
- b Should we assume that points E, F, and G are noncollinear?
 Explain your answer.

- 5 Draw a number line and shade all points that are at or between -5 and 2. Find the length of this shaded segment.

- 6 $\angle ABC$ is a right angle. The ratio of the measures of $\angle ABD$ and $\angle DBC$ is 3 to 2. Find $m\angle ABD$. (Hint: Let $m\angle ABD = 3x$ and $m\angle DBC = 2x$.)

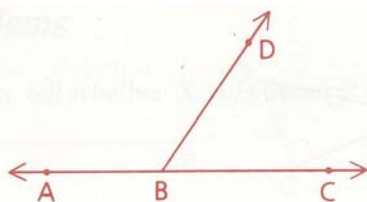


- 7 Explain how the sum of two acute angles could be
- a Acute
 - b Obtuse
 - c Right

- 8 a Change $124\frac{3}{5}^\circ$ to degrees and minutes.
b Change $84^\circ 50'$ to degrees.

Problem Set A, continued

- 9 $\angle ABD = (3x)^\circ$
 $\angle DBC = x^\circ$
Find: $m\angle ABD$



Problem Set B

- 10 A, K, O, and Y are collinear points. K is between O and A, the length of \overline{AO} added to the length of \overline{AY} is equal to the length of \overline{OY} ($OA + AY = OY$), and A is to the right of O. Draw a diagram that correctly represents this information.

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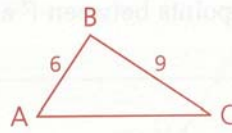
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- 11** Draw a diagram in which F is between A and E, F is also between R and S, and A, E, R, and S are noncollinear.

- 12** If $AB = 16$, $BC = 8$, and $AC = 24$, which point is between the other two?

For help with 13, see your ASN or watch a video on the “Triangle Inequality Theorem”.

- 13 a** AC must be smaller than what number?
b AC must be larger than what number?



- 14** Q is between P and R on a number line. $P = -8$, and $R = 4$.