Problem Set A

1A-2 Measures of Angles

Name_____

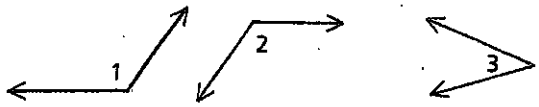
1 Change each of the following to degrees and minutes.

a $61\frac{2}{3}°$ **b** 71.7°

2 Change each of the following to degrees.

a 132°30′ **b** 19°45′

3 Which two of the angles below *appear* to be congruent?



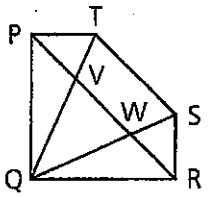
4 **a** $\overrightarrow{QV} \cap \overleftrightarrow{TS}$ = ?

b $\overline{WP} \cap \overline{VR}$ = ?

c $\overrightarrow{WP} \cup \overrightarrow{VR}$ = ?

d $\overrightarrow{SQ} \cup \overrightarrow{SR}$ = ?

e How many angles have vertex Q?



5 **a** Evaluate 49°32′55″ + 37°27′15″.

b Evaluate 123°15′ − 40°26′.

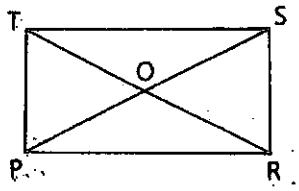
6 There is a right angle at each corner of PRST. (Later in the course you will learn that PRST is a rectangle.)

a If ∠TPO = 60°, how large is ∠RPO?

b If ∠PTO = 70°, how large is ∠STO?

c If ∠TOP = 50°, how large is ∠POR?

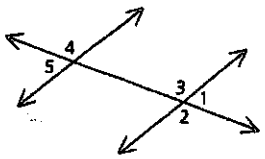
d Classify ∠TOS as acute, right, or obtuse.



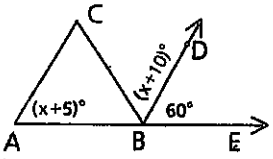
7 **a** Which angle *appears* to have the same measure as ∠1?

b Which angle *appears* larger, ∠2 or ∠3?

c Does ∠3 *appear* to be congruent to ∠4 or to ∠5?



8 If ∠CBD ≅ ∠DBE, find m∠A.



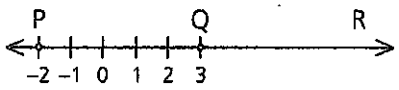
9 Find the measure of the angle formed by the hands of a clock at each time.

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

10 **a** Find PQ.

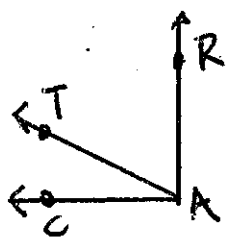
b If R's coordinate is 7, why is $\overline{PQ} \ncong \overline{QR}$?

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



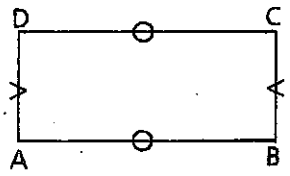
11 Given: ∠CAR is a right angle.
m∠CAT = 37°66′10″

Find: m∠RAT

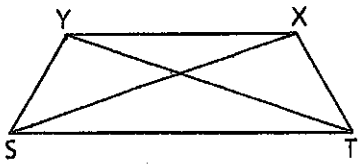


Problem Set B, *continued*

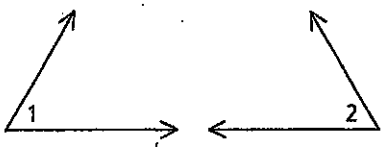
13 The perimeter of (the distance around) ABCD is 66, and $\overline{DC}$ is twice as long as $\overline{CB}$. How long is $\overline{AB}$?



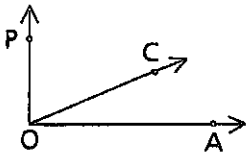
14 Given: $\overline{XS} \cong \overline{YT}$, $\overline{YS} \cong \overline{XT}$,
$XT = 2r + 5$,
$XS = 3m + 7$,
$YS = 3\frac{1}{2}r + 2$,
$YT = 4.2m + 5$
Solve for r and m.



15 Given: $\angle 1 \cong \angle 2$,
$m\angle 1 = x + 14$,
$m\angle 2 = y - 3$
Solve for y in terms of x.



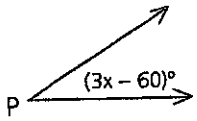
16 If $\angle POA$ is a right angle and if $\angle POC$ is three times as large as $\angle COA$, find $m\angle POC$.



17 $\angle P$ is acute.

a What are the restrictions on $m\angle P$?

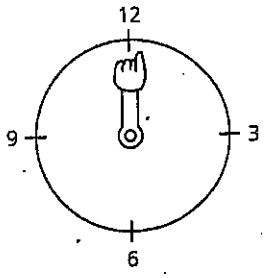
b What are the restrictions on x?



18 The hand is at 12 on the clock.

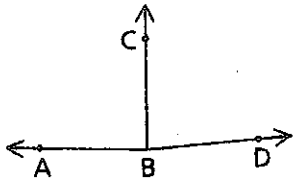
a If the hand were rotated 90° clockwise, at what number would it point?

b If the hand were rotated 150° clockwise and then 30° counterclockwise, at what number would it point?



Problem Set C

19 $\angle ABC$ and $\angle CBD$ have the same measure. If $\angle ABC = \left(\frac{3x}{2} + 2\right)°$ and $\angle CBD = \left(2x - 29\frac{1}{4}\right)°$, is $\angle ABD$ a straight angle?



20 Change $15\frac{2}{9}°$ to degrees, minutes, and seconds.