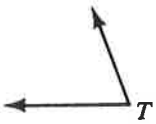
NAME _____ DATE _____ SCORE _____

Mixed Review—Chapters 1-2

1. Measure with a protractor.



$\angle T =$ 70 °.

2. Given an angle, $\angle SLV$, the vertex is L.

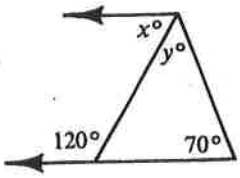
3. Write the converse of the statement: Vertical angles are equal.

If 2 angles are equal, then they are vertical.

Is the converse true? no

Find the values of x and y.

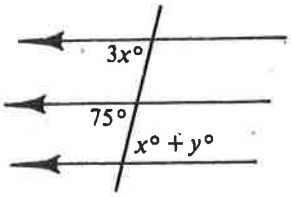
4.



$x =$ 60

$y =$ 50

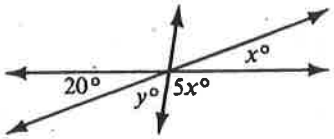
5.



$x =$ 25

$y =$ 50

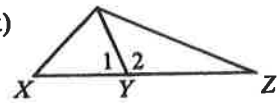
6.



$x =$ 20

$y =$ 60

7. $\angle XYZ$ is a(n) straight angle. (acute/obtuse/straight)

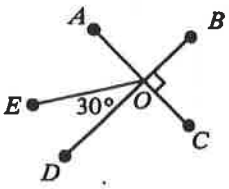


$\angle 1 + \angle 2 =$ 180 °.

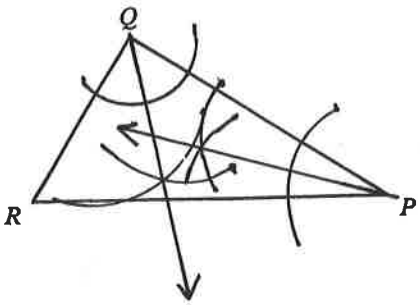
8. $\angle AOE =$ 60 °

9. $\angle BOC =$ 90 °

10. $\angle EOC =$ 120 °



11. Construct the bisectors of $\angle Q$ and $\angle P$.



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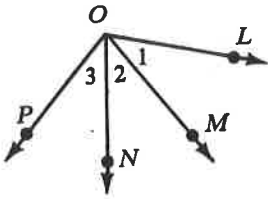
Mixed Review—Chapters 1-2 *(continued)*

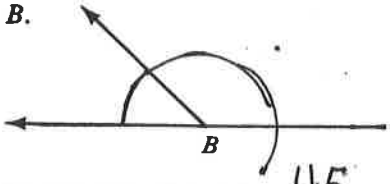
12. Complete the following proof.
Given: $\overrightarrow{OM}$ bisects $\angle LON$.
$\overrightarrow{ON}$ bisects $\angle MOP$.
Prove: $\angle 1 = \angle 3$

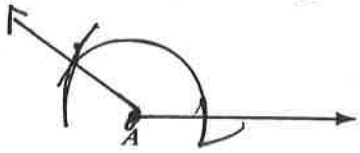


Statements	Reasons
1. $\angle$ 1 $= \angle 2$	1. *Given:* $\overrightarrow{OM}$ bisects $\angle LON$.
2. $\angle 2 = \angle 3$	2. Given $\overrightarrow{ON}$ bisects $\angle MOP$
3. $\angle 1 = \angle 3$	3. Transitive

13. Write in "If-then" form. Underline the hypothesis once and the conclusion twice:
He who hesitates is lost. If he hesitates, then he is lost.

14. At A, construct an angle supplementary to $\angle B$.





15. If two equal angles are complementary, then the measure of each is 45°.

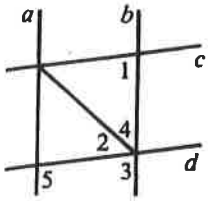
Tell which lines, if any, must be parallel.
If no lines must be parallel write *none*.

16. $\angle 1 = \angle 3$ c and d

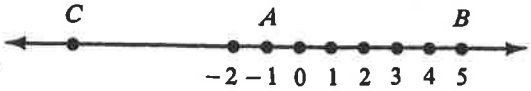
17. $\angle 5 + \angle 3 = 180°$ a and b

18. $\angle 5$ is supplementary to $\angle 4$. none

19. $\angle 4 + \angle 2 = \angle 5$ a and b



Refer to the number line for Exercises 20–22.



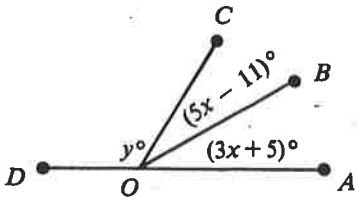
20. Another name for $\overrightarrow{CA}$ is $\overrightarrow{CB}$.

21. The coordinate of the midpoint of $\overline{AB}$ is 2.

22. A is the midpoint of $\overline{CB}$. The coordinate of C is −7.

23. *Given:* $\overrightarrow{OB}$ bisects $\angle COA$. Find the values of x and y.

$x =$ 8, $y =$ 122



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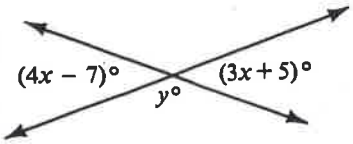
Mixed Review—Chapters 1-2 *(continued)*

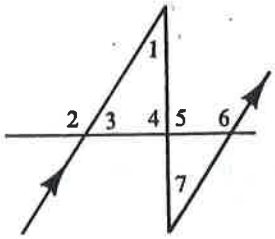
24. Find the values of x and y.



$x =$ 12

$y =$ 139

Refer to the figure at the right for Exercises 25–27.



25. ∠ 1 and ∠ 7 are equal alternate interior angles.

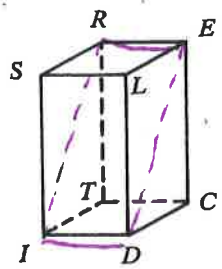
26. ∠ 2 and ∠ 6 are equal corresponding angles.

27. ∠ 3 and ∠ 6 are supplementary same-side interior angles.

28. Which of the following represents a length?

$\overleftrightarrow{AB}$, AB, $\overrightarrow{AB}$, $\overline{AB}$ AB

Refer to the figure at the right for Exercises 29–31.

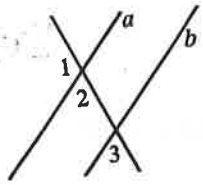


29. A plane parallel to plane *RECT* is SLDI.

30. The intersection of plane *RTIS* and plane *ERSL* is $\overleftrightarrow{RS}$.

31. $\overleftrightarrow{RE}$ and $\overleftrightarrow{LD}$ or $\overleftrightarrow{ST}$ are skew lines.

32. Complete the following proof.
Given: ∠ 1 and ∠ 3 are supplementary.
Prove: $a \parallel b$



Statements	Reasons
1. ∠1 & ∠3 are supp.	1. Given
2. ∠1 and ∠2 are supp.	2. Supplement Thm.
3. ∠2 = ∠3	3. Corresponding Angles
4. a ∥ b	4. Converse of Corresponding ∠s

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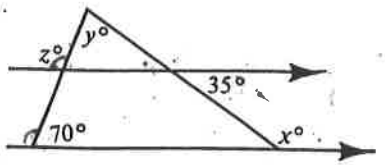
Mixed Review—Chapters 1–4

Find the values of *x*, *y*, and *z*.

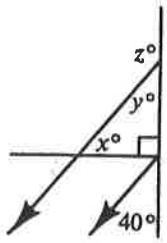
1.



$x =$ 145, $y =$ 75,

$z =$ 110

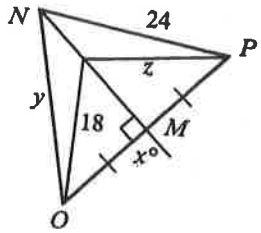
2.



$x =$ 50, $y =$ 40,

$z =$ 140

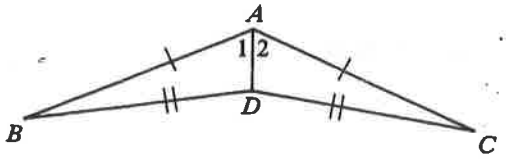
3.



$x =$ 90, $y =$ 24,

$z =$ 18

4. Complete the following proof.
Given: $AB = AC$; $BD = CD$
Prove: $\overline{AD}$ bisects $\angle BAC$.

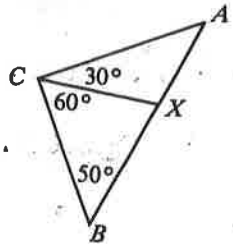


Statements	Reasons
1. $AB = AC$	1. given
2. BD = CD	2. given
3. $AD = AD$	3. Reflexive
4. $\triangle ADC \cong \triangle$ ADB	4. SSS
5. $\angle 1 = \angle 2$	5. CPCTC
6. AD bisects ∡BAC	6. Def of bisector

5. Which postulate justifies the statement: If $x + 4 = 28$, then $x = 24$? Subtraction

Classify each triangle as *acute*, *right*, or *obtuse*.

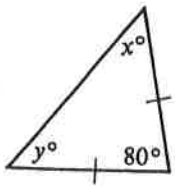
6. $\triangle ACB$ Right **7.** $\triangle AXC$ OBTUSE **8.** $\triangle BCX$ ACUTE



9. If $\triangle DRE \cong \triangle THO$, then $\angle R = \angle$ H, $OT =$ ED, and $RD =$ HT.

Find the values of *x* and *y*.

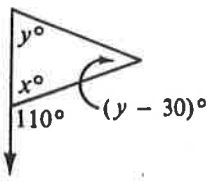
10.



$x =$ 50

$y =$ 50

11.



$x =$ 70

$y =$ 70

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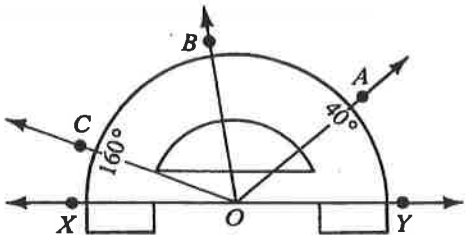
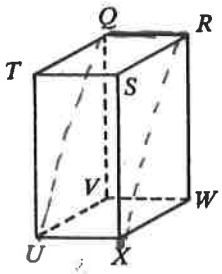
Mixed Review—Chapters 1–4 *(continued)*

$\angle AOC =$ 120°



13. $\overrightarrow{OB}$ bisects $\angle COA$. Find the number on the protractor corresponding to $\overrightarrow{OB}$. 100°

Tell whether each statement is true or false.



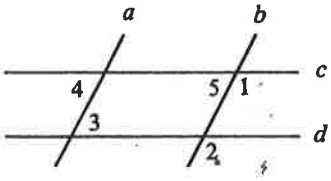
14. There is a plane (not shown) containing points Q, R, and X. T

15. The points R, S, and W are collinear. F

16. There is only one plane passing through $\overleftrightarrow{TU}$. F

17. $\overleftrightarrow{QV}$ and $\overleftrightarrow{RS}$ are skew lines. T

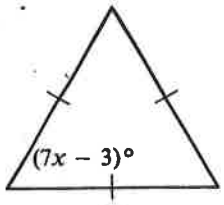
Tell which lines, if any, must be parallel. If no lines must be parallel write *none*.



18. $\angle 1 = \angle 2$ c and d **19.** $\angle 4 = \angle 3$ c and d

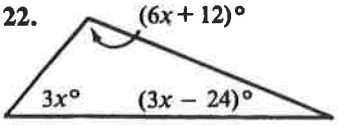
20. $\angle 1 + \angle 4 = 180°$ a and b

Find the value of x.



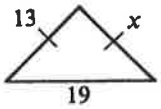
$x =$ 9

22.



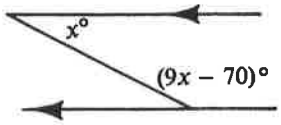
$x =$ 16

23.



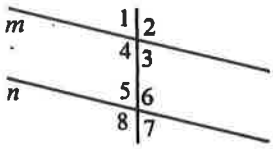
$x =$ 13

24.



$x =$ 25

Write a proof in two-column form.



25. *Given:* $\angle 2$ and $\angle 7$ are supplementary.
Prove: $m \parallel n$

Statements	Reasons
1) ∡2 and ∡7 are supp.	1) Given
2) m∡2 + m∡7 = 180	2) Def of supp.
3) m∡2 + m∡3 = 180; ~~[illegible]~~	3) Def of linear pr
4) m∡2 + m∡7 = m∡2 + m∡3	4) Substitution
5) m∡7 = m∡3	5) Subtraction
6) m ∥ n	6) Converse of Corresponding ∡s

(continued)