

Additional Resources

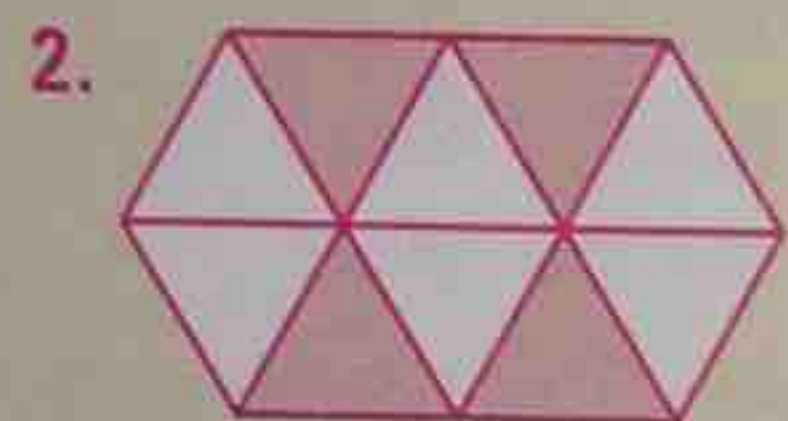
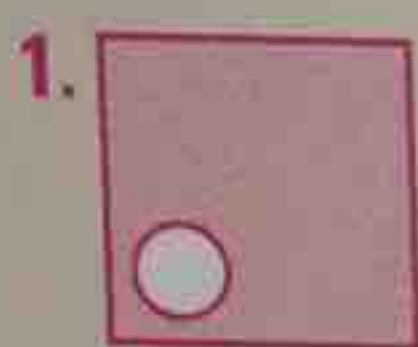
Assessment Book

- Chapter Test, Levels A, B, C, pp. 19–24
- Standardized Chapter Test, pp. 25–26
- SAT/ACT Chapter Test, pp. 27–28
- Alternative Assessment, pp. 29–30

Test Generator CD-ROM

Chapter Test

Easily-readable reduced copies (with answers) of Chapter Test B, the Standardized Chapter Test, and the Alternative Assessment from the Assessment Book can be found on pp. 70G–70H.



14. Equation (Reason)

$$9x + 31 = -23 \text{ (Given)}$$

$$9x = -54 \text{ (Subtraction Property of Equality)}$$

$$x = -6 \text{ (Division Property of Equality)}$$

15. Equation (Reason)

$$-7(-x + 2) = 42 \text{ (Given)}$$

$$-x + 2 = -6 \text{ (Division Property of Equality)}$$

$$-x = -8 \text{ (Subtraction Property of Equality)}$$

$$x = 8 \text{ (Division Property of Equality)}$$

16. Equation (Reason)

$$26 + 2(3x + 11) = -18x \text{ (Given)}$$

$$26 + 6x + 22 = -18x \text{ (Distributive Property)}$$

$$48 + 6x = -18x \text{ (Simplify.)}$$

$$48 = -24x \text{ (Subtraction Property of Equality)}$$

$$-2 = x \text{ (Division Property of Equality)}$$

4. $-\frac{1}{2}$ of the previous number; 6.25

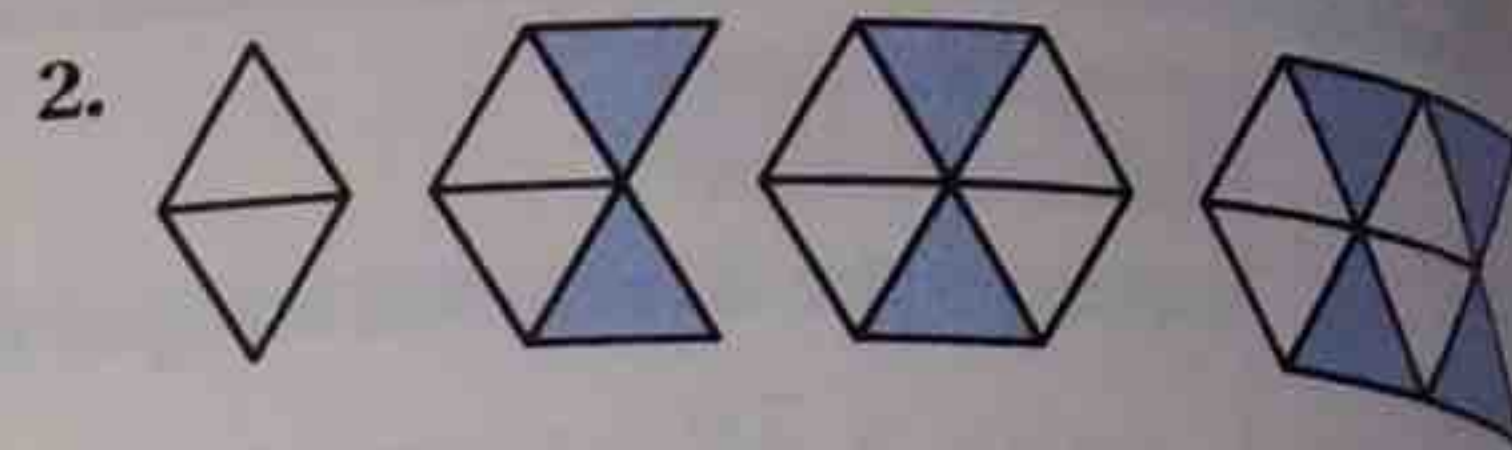
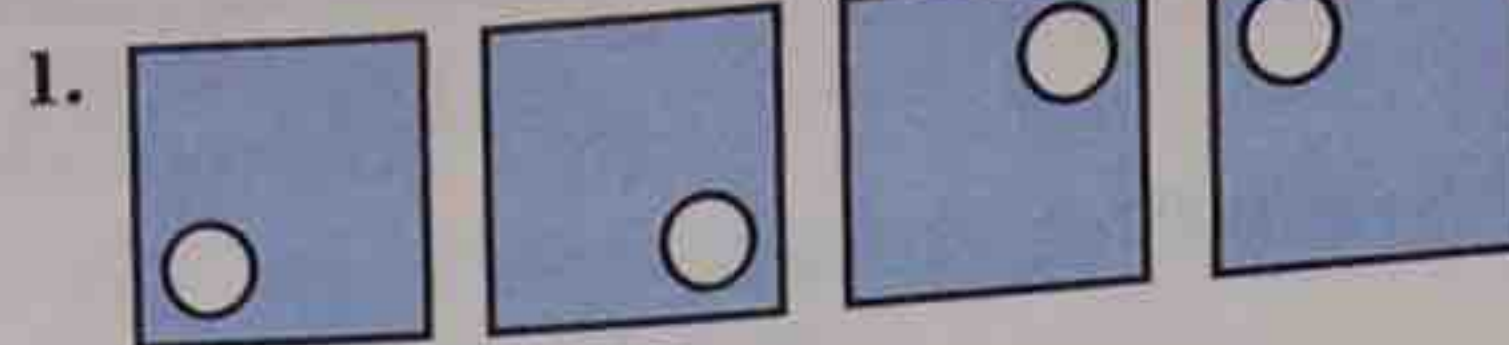
5. If the angles are right angles, then they are congruent; if the angles are congruent, then they are right angles; if the angles are not right angles, then they are not congruent; if the angles are not congruent, then they are not right angles.

6. If the creature is a frog, then it is an amphibian; if the creature is an amphibian, then it is a frog; if the creature is not a frog, then it is not an amphibian; if the creature is not an amphibian, then it is not a frog.

7. If $x = -2$, then $5x + 4 = -6$; if $5x + 4 = -6$, then $x = -2$; if $x \neq -2$, then $5x + 4 \neq -6$; if $5x + 4 \neq -6$, then $x \neq -2$.

8. If a polygon is regular, then it is equilateral; if a polygon is equilateral, then it is regular; if a polygon is not regular, then it is not equilateral; if a polygon is not equilateral, then it is not regular.

Sketch the next figure in the pattern. 1, 2. See margin.



Describe the pattern in the numbers. Write the next number.

3. $-6, -1, 4, 9, \dots$ increasing by 5; 14

4. $100, -50, 25, -12.5, \dots$

In Exercises 5–8, write the if-then form, the converse, the inverse, and the contrapositive for the given statement.

5. All right angles are congruent.

7. $5x + 4 = -6$, because $x = -2$.

9. If you decide to go to the football game, then you will miss band practice. Tonight, you are going the football game. Using the Law of Detachment, what statement can you make? **You will miss band practice.**

10. If Margot goes to college, then she will major in Chemistry. If Margot majors in Chemistry, then she will need to buy a lab manual. Using the Law of Syllogism, what statement can you make?
If Margot goes to college, then she will need to buy a lab manual.

Use the diagram to write examples of the stated postulate.

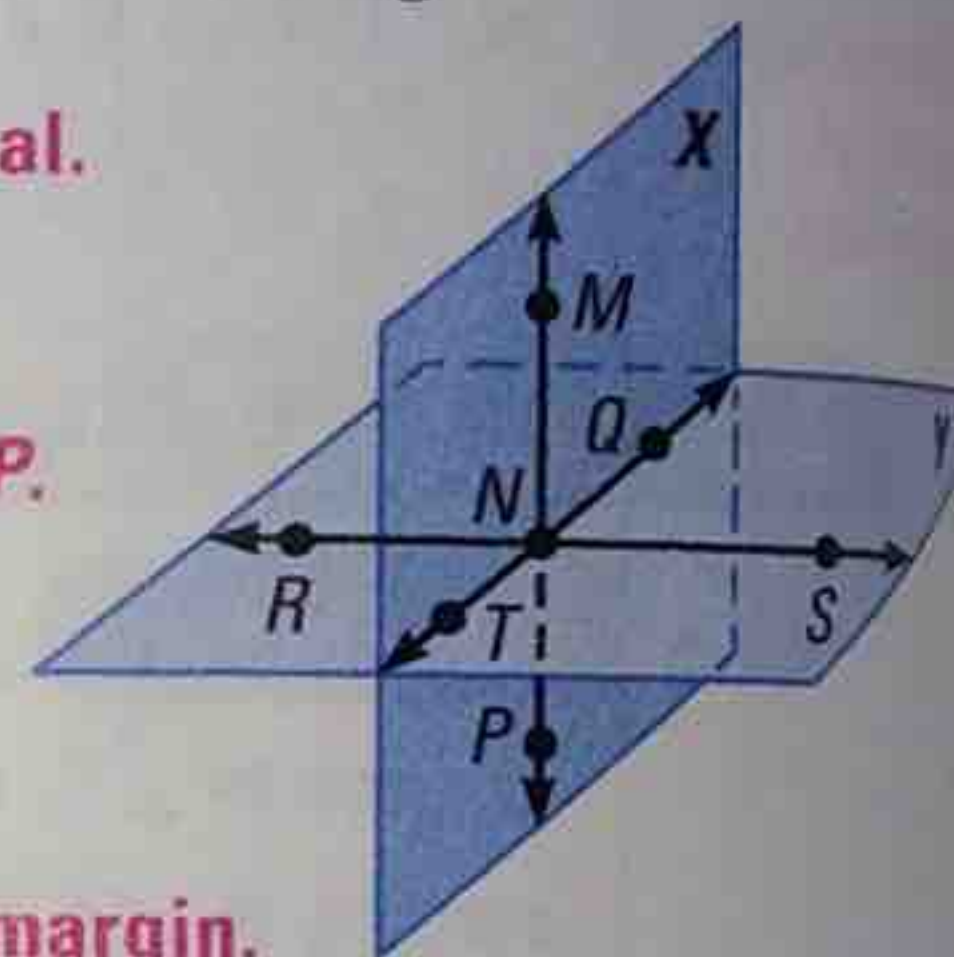
11. A line contains at least two points. **Sample answer: \overleftrightarrow{MP} contains points M and P .**

12. A plane contains at least three noncollinear points.

Sample answer: Plane X contains points $M, Q,$ and P .

13. If two planes intersect, then their intersection is a line.

Planes X and Y intersect at \overleftrightarrow{NQ} .



Solve the equation. Write a reason for each step. 14–16. See margin.

14. $9x + 31 = -23$

15. $-7(-x + 2) = 42$

16. $26 + 2(3x + 11) = -18x$

In Exercises 17–19, match the statement with the property that it illustrates.

17. If $\angle RST \cong \angle XYZ$, then $\angle XYZ \cong \angle RST$. **B** A. Reflexive Property of Congruence

18. $\overline{PQ} \cong \overline{PQ}$ **A** B. Symmetric Property of Congruence

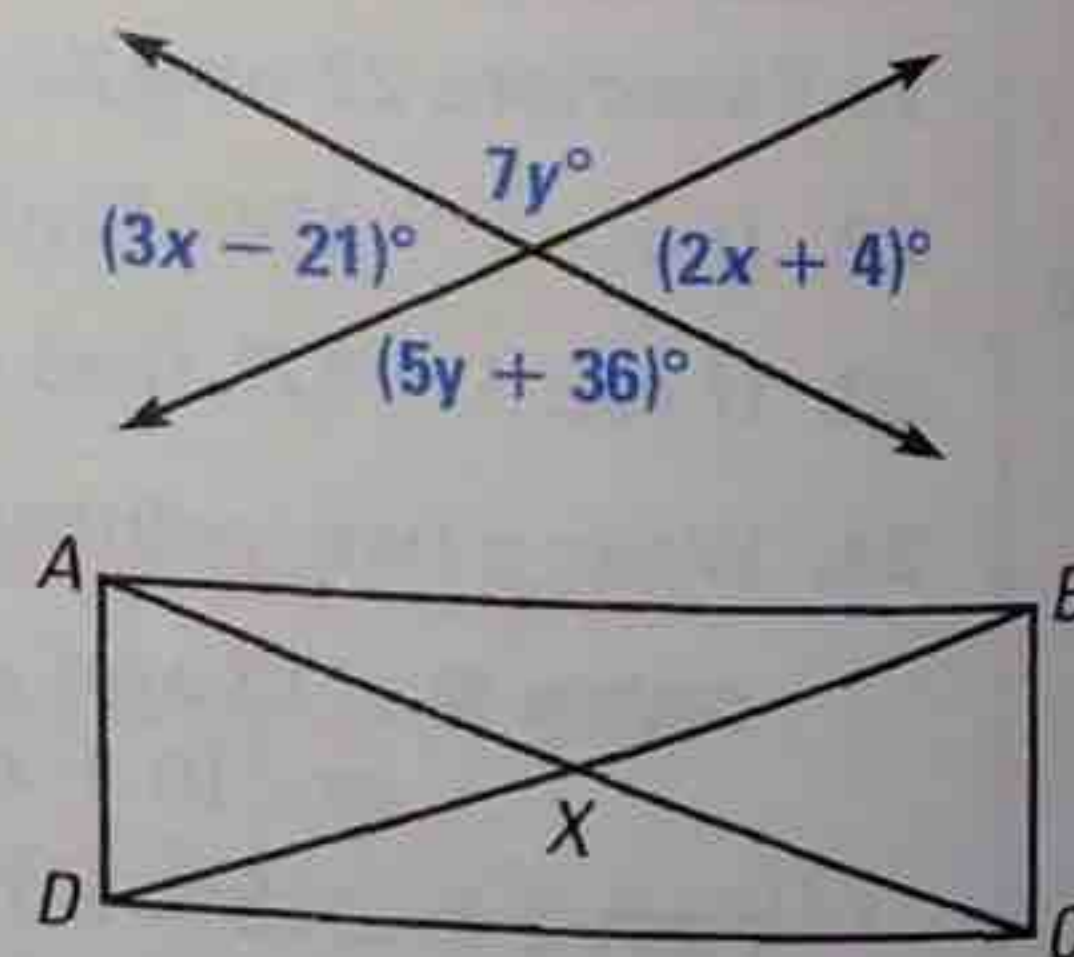
19. If $\overline{FG} \cong \overline{JK}$ and $\overline{JK} \cong \overline{LM}$, then $\overline{FG} \cong \overline{LM}$. **C** C. Transitive Property of Congruence

20. Use the Vertical Angles Congruence Theorem to find the measure of each angle in the diagram at the right. **$54^\circ, 54^\circ, 126^\circ, 126^\circ$**

21. Write a two-column proof. **See margin.**

GIVEN $\triangleright \overline{AX} \cong \overline{DX}, \overline{XB} \cong \overline{XC}$

PROVE $\triangleright \overline{AC} \cong \overline{BD}$



21. Statements (Reasons)

1. $\overline{AX} \cong \overline{DX}, \overline{XB} \cong \overline{XC}$ (Given)

2. $AX = DX, XB = XC$ (Definition of congruent segments)

3. $AX + XC = AC, BX + XD = BD$ (Segment Addition Postulate)

4. $DX + XC = AC, XC + XD = BD$ (Substitution)

5. $AC = BD$ (Transitive Property of Equality)

6. $\overline{AC} \cong \overline{BD}$ (Definition of congruent segments)