

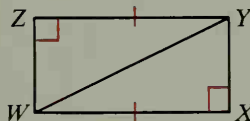
Cumulative Review: Chapters 1–12

For Exercises 1–9 classify each statement as true or false.

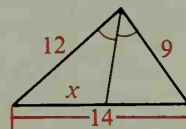
- A**
1. No more than one plane contains two given intersecting lines.
 2. The conditional “ p only if q ” is equivalent to “if p , then q .”
 3. If the vertex angle of an isosceles triangle has measure j , then the measure of a base angle is $180 - 2j$.
 4. In $\triangle RST$, if $m\angle R = 48$ and $m\angle S = 68$, then $RT > RS$.
 5. If right $\triangle JEH$ has hypotenuse \overline{JE} , then $\tan J = \frac{JH}{EH}$.
 6. It is possible to construct an angle of measure 105° .
 7. The area of a triangle with sides 3, 3, and 2 is $4\sqrt{2}$.
 8. When a square is circumscribed about a circle, the ratio of the areas is $4:\pi$.
 9. A triangle with sides of length $\sqrt{3}$, 2, and $\sqrt{7}$ is a right triangle.

- B**
10. In $\square JKLM$, $m\angle J = \frac{3}{2}x$ and $m\angle L = x + 17$. Find the numerical measure of $\angle K$.

11. Given: $\overline{WZ} \perp \overline{ZY}$; $\overline{WX} \perp \overline{XY}$; $\overline{WX} \cong \overline{YZ}$
Prove: $\overline{WZ} \parallel \overline{XY}$



12. Prove: If the diagonals of a parallelogram are perpendicular, then the parallelogram must be a rhombus.
13. For $\triangle JKL$ and $\triangle XYZ$ use the following statement:
“If $\angle J \cong \angle X$ and $\angle K \cong \angle Y$, then $\triangle JKL \sim \triangle XYZ$.”
a. Name the postulate or theorem that justifies the statement.
b. Write the converse of the statement. Is the converse true or false?
14. Find the value of x in the diagram at the right.



15. \overline{AB} and \overline{CD} are chords of $\odot P$ intersecting at X .
If $AX = 7.5$, $BX = 3.2$, $CD = 11$, and $CX > DX$, find CX .
16. Describe each possibility for the locus of points in space that are equidistant from the sides of a $\triangle ABC$ and 4 cm from A .
17. \widehat{AB} lies on $\odot O$ with $m\widehat{AB} = 60$. $\odot O$ has radius 8. Find AB .
18. A regular square pyramid has base edge 10 and height 12. Find its total area and volume.
19. A cylinder has a radius equal to its height. The total area of the cylinder is $100\pi \text{ cm}^2$. Find its volume.
20. A sphere has a diameter of 1.8 cm. Find its surface area to the nearest square centimeter. (Use $\pi \approx 3.14$.)