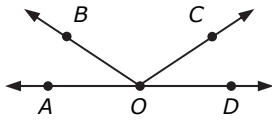
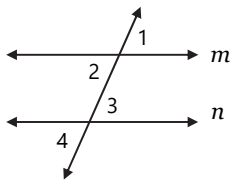


LESSON 173 Review: 1st and 2nd Quarters

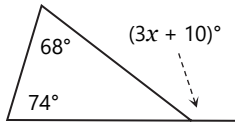
1. $\angle AOB \cong \angle COD$. Find the measure of $\angle AOB$ if $\angle BOC$ measures 112° .



2. Lines m and n are parallel. Name all pairs of congruent angles. Explain why each pair is congruent.

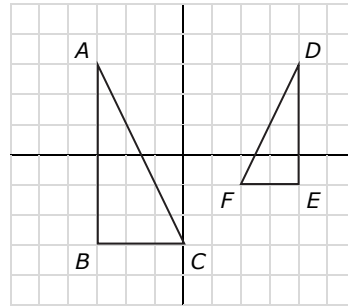


3. Find the value of x .



4. Find the sum of the interior angles and the sum of the exterior angles of a polygon with 12 sides.
5. Point $P(-2, 3)$ is reflected over the x -axis and then translated by the rule $(x, y) \rightarrow (x + 3, y)$. Find the final image of P .
6. A figure is reflected over the line $x = 0$ and then over the line $x = 2$. What single transformation produces the same final image of the figure?

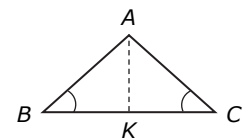
7. Describe a sequence of transformations that maps $\triangle ABC$ onto $\triangle DEF$.



8. What comes next in the sequence 1, 5, 9, 13, 17...?
9. What property justifies the first step in solving $5x - 3 = 12$?
10. What is the first step to prove, using indirect proof, that a quadrilateral cannot have four obtuse angles?
11. Complete the proof of the Base Angles Converse [40.2].

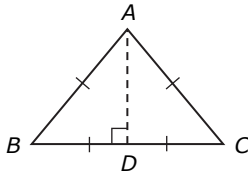
Given: $\angle B \cong \angle C$

Prove: $\overline{AB} \cong \overline{AC}$

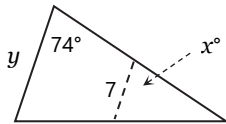


| STATEMENTS | REASONS |
|--|-----------------|
| 1. $\angle B \cong \angle C$ | 1. Given |
| 2. Draw \overline{AK} bisecting $\angle A$. | 2. Construction |
| 3. $\angle BAK \cong \angle CAK$ | 3. |
| 4. $\overline{AK} \cong \overline{AK}$ | 4. |
| 5. $\triangle ABK \cong \triangle ACK$ | 5. |
| 6. $\overline{AB} \cong \overline{AC}$ | 6. |

12. What congruence criterion can be used most directly to prove $\triangle ABD \cong \triangle ACD$. List all that apply.

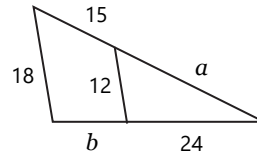


13. The dashed segment is a midsegment of the triangle. Find the values of x and y .

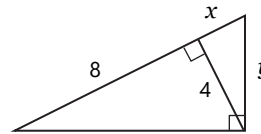


14. Match the points of concurrency with the concurrent segments that created them.
- | | |
|-----------------|---------------------------|
| A) circumcenter | 1) median |
| B) incenter | 2) altitude |
| C) centroid | 3) angle bisector |
| D) orthocenter | 4) perpendicular bisector |
15. In $\triangle ABC$, medians AD and BE intersect at P . What are PD and AD if $AP = 10$?
16. In $\triangle XYZ$, $m\angle X = 48^\circ$ and $m\angle Y = 82^\circ$. List the sides from shortest to longest.
17. The diagonals of a quadrilateral are congruent and bisect each other at right angles. What is the name of the quadrilateral?

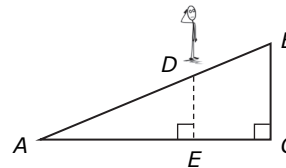
18. Find the values of a and b that make the triangles similar.



19. Find the values of x and y in simplest radical form.

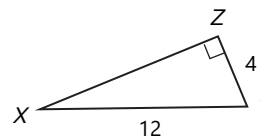


20. Ryker walks up 24 meters on a stairway that is 36 m long and 15 m high. How high is he from the ground?



21. Find the sine, cosine, and tangent ratios of 30° in simplest radical form.

22. Solve the triangle (find all sides and angles). Round to the nearest tenth.



23. A ski slope is 80 meters long with a vertical drop of 30 meters. What is the angle of depression of the slope? Round to the nearest degree.