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 Use the diagram on the right and the word bank to answer the following questions. What type of angle relationship is demonstrated by each pair of angles?



For numbers 5 – 12, solve for x and state the angle relationship that is demonstrated in the diagram.















11. Find the value of x if ray EP is an angle <u>bisector</u>.



12. Is a// b? Explain why or why not with complete sentences, using the following terms: vertical angles, alternate interior angles, or corresponding angles. Show the work that helped lead you to your conclusion.



13. \angle ABC is translated along \overrightarrow{DE} . Explain how this transformation demonstrates the following:

If lines are //, then corresponding angles are \cong .

If corresponding angles are \cong , then lines are //.



14. Given: $\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$





15. Prove that parallel lines make alternate interior angles congruent. (You cannot use if lines // \rightarrow alt interior \angle s \cong , but you can use vertical and corresponding \angle theorems)

Given: a//b

Prove: $\angle 7 \cong \angle 3$



Statements	Reasons