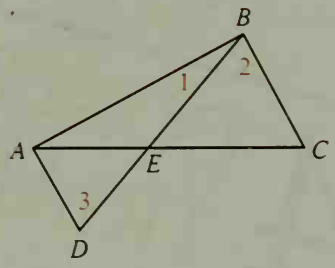
Name or state the postulate, definition, or theorem that justifies each statement about the diagram.



27. $\angle AED \cong \angle BEC$

28. $AE + EC = AC$

29. $m\angle 1 + m\angle 2 = m\angle ABC$

30. If $\angle 2 \cong \angle 3$, then $\overline{AD} \parallel \overline{BC}$.

31. $m\angle AEB = m\angle 2 + m\angle C$

32. If $\overline{DA} \perp \overline{AB}$, then $m\angle DAB = 90$.

33. $m\angle 1 + m\angle 3 + m\angle DAB = 180$

34. If $\angle ABC$ is a right angle, then $\overline{AB} \perp \overline{BC}$.

Complete.

35. The endpoint of $\overrightarrow{XY}$ is point ___?___.

36. If the sum of the measures of two angles is 180, then the angles are ___?___.

37. If the measure of each interior angle of a regular polygon is 108, then the polygon is a(n) ___?___.

38. If M is the midpoint of $\overline{AB}$ and $AM = 12$, then $AB =$ ___?___.

39. If two parallel lines are cut by a transversal, then alternate interior angles are ___?___.

40. The process of forming a conclusion based on past observations or patterns is called ___?___ reasoning.

41. When a statement and its converse are both true, they can be combined into one statement called a ___?___.

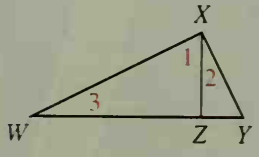
42. In a decagon the sum of the measures of the exterior angles is ___?___.

43. In an octagon the sum of the measures of the interior angles is ___?___.

44. Every triangle has at least two ___?___ angles.

Write a two column proof.

B **45.** Given: $\overline{WX} \perp \overline{XY}$;
$\angle 1$ is comp. to $\angle 3$.
Prove: $\angle 2 \cong \angle 3$



46. Given: $\overline{RU} \parallel \overline{ST}$; $\angle R \cong \angle T$
Prove: $\overline{RS} \parallel \overline{UT}$