Use the diagram shown at the right. (Lesson 1.1)

1. What is another name for $AE$?
2. Name all rays with endpoint $E$.
3. What is another name for $BC$?
4. Name a ray opposite to $EC$.

In Exercises 5–7, let $m\angle A = (6x + 7)^\circ$ and $m\angle B = (3x + 20)^\circ$. (Lesson 1.5)

5. Find $m\angle A$ and $m\angle B$ if $\angle A$ and $\angle B$ are supplementary.
6. Find $m\angle A$ and $m\angle B$ if $\angle A$ and $\angle B$ are complementary.
7. Find $m\angle A$ and $m\angle B$ if $m\angle A + m\angle B = 360^\circ$.

Make a valid conclusion in the situation. (Lesson 2.3)

8. If it is a weekday, Trisha is at school. Today is Wednesday.
9. If two angles have the same measure, then they are congruent. $m\angle X = 77^\circ = m\angle Y$.
10. If a person is born in the United States, he or she is a U.S. citizen. Taylor was born in New Jersey.

What postulate or theorem justifies the statement? (Lesson 3.2)

11. $\angle 1 \cong \angle 8$
12. $\angle 3 \cong \angle 7$
13. $\angle 4 \cong \angle 5$
14. $m\angle 2 + m\angle 5 = 180^\circ$

In the diagram, $MN \perp NP$. Find the value of $x$. (Lesson 3.6)

15. $77^\circ (x - 12)^\circ$
16. $\angle (3x + 7)^\circ$
Tell which triangles you can show are congruent in order to prove the statement. What postulate or theorem would you use? (Lesson 4.6)

17. $\angle ABD \cong \angle CBD$

18. $FJ \cong JI$

19. Find the values of $x$ and $y$. (Lesson 4.7)

20. Find the indicated length. (Lesson 5.2)

21. A point on an image and the translation are given. Find the corresponding point on the original figure. (Lesson 4.8)

22. Point on image: $(5, 2); \text{translation: } (x, y) \rightarrow (x - 4, -y)$

23. Point on image: $(-4, 1); \text{translation: } (x, y) \rightarrow (2 - x, y + 5)$

24. $DE$ is a midsegment of $\triangle ABC$. Find the value of $x$. (Lesson 5.1)

25. $BC$

26. $AC$

27. $AC$