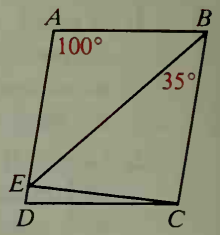
Chapter 3

Indicate the best answer by writing the appropriate letter.

1. If $\overrightarrow{BE}$ bisects $\angle ABC$, what is the measure of $\angle AEB$?
   a. 30 **b.** 35 **c.** 40 **d.** 45

2. If $m\angle ABE = 40$, what is the measure of $\angle DEB$?
   a. 140 **b.** 40 **c.** 75 **d.** 135

3. If $\overline{AB} \parallel \overline{DC}$, what is the measure of $\angle D$?
   a. 70 **b.** 80 **c.** 90 **d.** 100

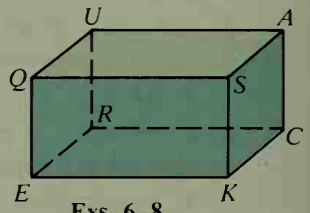


Exs. 1-4

4. Which of the following would allow you to conclude that $\overline{AD} \parallel \overline{BC}$?
   a. $\angle DEC \cong \angle BCE$ **b.** $\angle ABE \cong \angle BEC$
   c. $\angle BEC \cong \angle BCE$ **d.** $m\angle A + m\angle AEC = 180$

5. What is the measure of each interior angle of a regular octagon?
   a. 150 **b.** 144 **c.** 140 **d.** 135

6. The plane containing Q, S, A, U appears to be parallel to the plane containing which points?
   a. Q, E, K, S **b.** E, K, C, R
   c. R, E, Q, U **d.** U, R, C, A



Exs. 6-8

7. Which of the following appear to be skew lines?
   a. $\overleftrightarrow{QE}$ and $\overleftrightarrow{AC}$ **b.** $\overleftrightarrow{QU}$ and $\overleftrightarrow{KC}$
   c. $\overleftrightarrow{AC}$ and $\overleftrightarrow{UR}$ **d.** $\overleftrightarrow{QS}$ and $\overleftrightarrow{AC}$

8. $\overleftrightarrow{EK}$ does *not* appear to be parallel to the plane containing which points?
   a. U, A, C **b.** Q, U, A **c.** Q, U, R **d.** Q, S, C

9. The sum of the measures of the interior angles of a certain polygon is the same as the sum of the measures of its exterior angles. How many sides does the polygon have?
   a. four **b.** six **c.** eight **d.** ten

10. What is the next number in the sequence 1, 2, 4, 7, 11, . . . ?
    a. 17 **b.** 13 **c.** 16 **d.** 15

11. $\overline{AC}$ is a diagonal of regular pentagon $ABCDE$. What is the measure of $\angle ACD$?
    a. 36 **b.** 54 **c.** 72 **d.** 108

12. A, B, C, and D are coplanar points. $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$, $\overleftrightarrow{AB} \perp \overleftrightarrow{AC}$, and $m\angle ACD = 2x + 8$. Find the value of x.
    a. 41 **b.** 49 **c.** 90 **d.** 180

13. What is the *principal* basis for inductive reasoning?
    a. definitions **b.** previously proved theorems
    c. postulates **d.** past observations