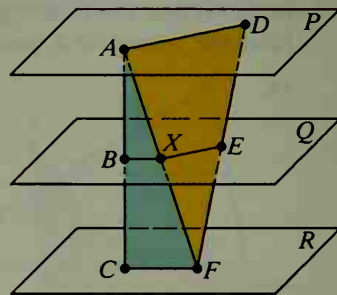


- C 25.** Given: Parallel planes  $P$ ,  $Q$ , and  $R$  cutting transversals  $\overleftrightarrow{AC}$  and  $\overleftrightarrow{DF}$ ;  $AB = BC$

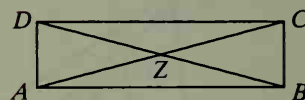
Prove:  $DE = EF$

(Hint: You can't assume that  $\overleftrightarrow{AC}$  and  $\overleftrightarrow{DF}$  are coplanar. Draw  $\overline{AF}$ , cutting plane  $Q$  at  $X$ . Using the plane of  $\overleftrightarrow{AC}$  and  $\overline{AF}$ , apply Theorems 3-1 and 5-10. Then use the plane of  $\overline{AF}$  and  $\overleftrightarrow{FD}$ .)



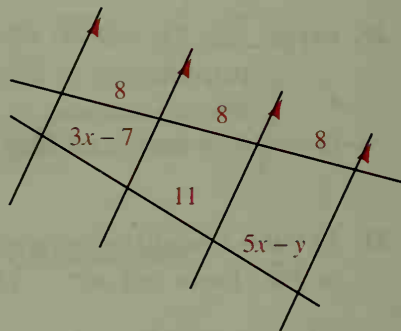
## Self-Test 1

The diagonals of  $\square ABCD$  intersect at  $Z$ . Tell whether each statement *must be*, *may be*, or *cannot be* true.

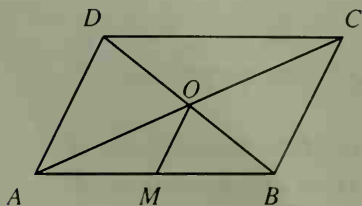


1.  $\overline{AC} \cong \overline{BD}$
2.  $\overline{DZ} \cong \overline{BZ}$
3.  $\overline{AD} \parallel \overline{BC}$
4.  $m\angle DAB = 85$  and  $m\angle BCD = 95$
5. List five ways to prove that quad.  $ABCD$  is a parallelogram.

6. a. State a theorem that allows you to conclude that  $3x - 7 = 11$ .
- b. Find the values of  $x$  and  $y$ .



7. Given:  $\square ABCD$ ;  
 $M$  is the midpoint of  $\overline{AB}$ .  
 Prove:  $MO = \frac{1}{2}AD$



8. Given:  $\square PQRS$ ;  
 $\overline{PX}$  bisects  $\angle QPR$ ;  
 $\overline{RY}$  bisects  $\angle SRP$ .  
 Prove:  $\square RYPX$  is a  $\square$ .

