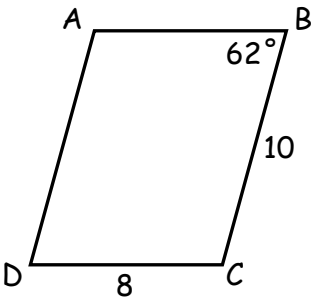
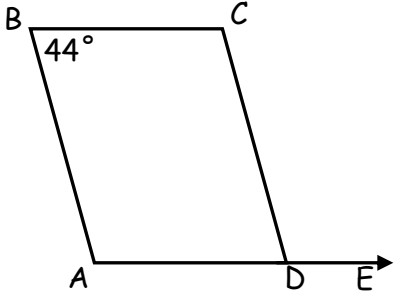


For each parallelogram below, find the values of the missing sides or angles.

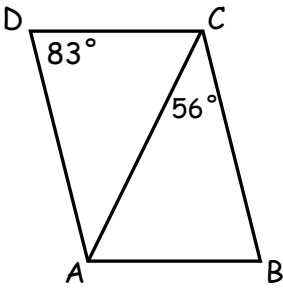
1)  $AB =$  \_\_\_\_\_  
 $AD =$  \_\_\_\_\_  
 $m\angle A =$  \_\_\_\_\_



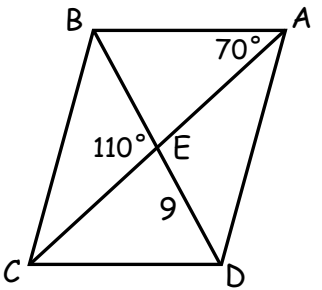
2)  $m\angle A =$  \_\_\_\_\_  
 $m\angle BCD =$  \_\_\_\_\_  
 $m\angle CDE =$  \_\_\_\_\_



3)  $m\angle DCA =$  \_\_\_\_\_  
 $m\angle CAD =$  \_\_\_\_\_  
 $m\angle CBA =$  \_\_\_\_\_

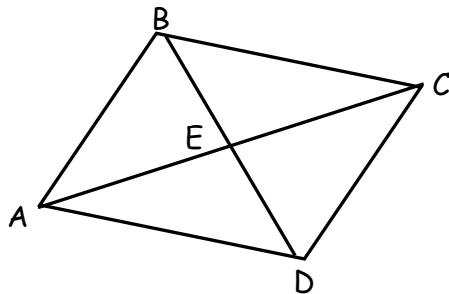
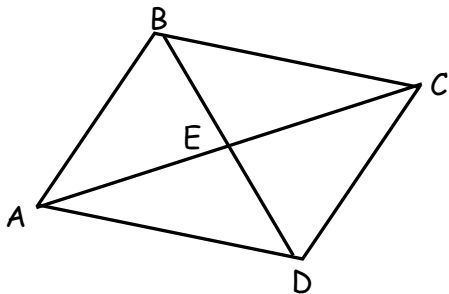


4)  $m\angle ECD =$  \_\_\_\_\_  
 $m\angle AED =$  \_\_\_\_\_  
 $m\angle ABD =$  \_\_\_\_\_



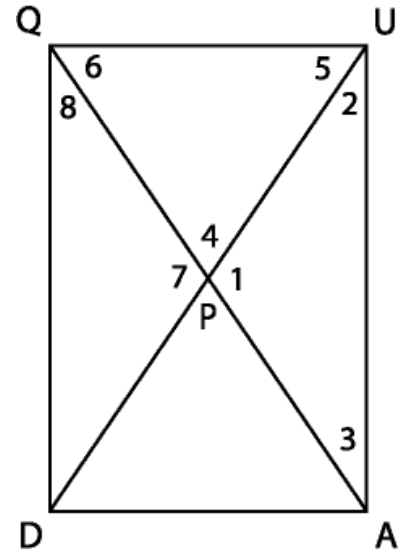
For problems 5 - 10,  $ABCD$  is a parallelogram. Find each unknown measure.

- 5) If  $m\angle DAB = 80^\circ$ , then  $m\angle ABC =$  \_\_\_\_\_      6) If  $m\angle ADC = 127^\circ$ , then  $m\angle CBA =$  \_\_\_\_\_



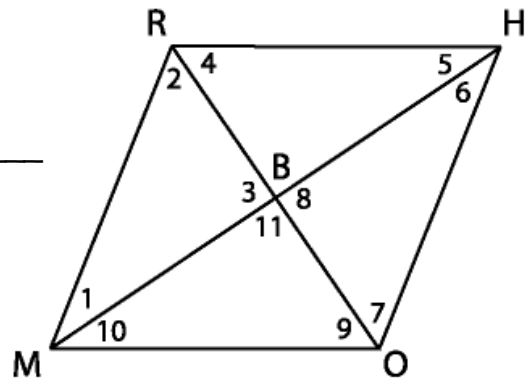
For problems 1-8, use rectangle QUAD. Treat each problem independently.

- 1) If  $DP = 4x + 1$  and  $PA = x + 13$ , then  $DP =$  \_\_\_\_\_
- 2) If  $DU = 5x - 4$  and  $QP = 2x + 7$ , then  $DU =$  \_\_\_\_\_
- 3) If  $m\angle 2 = 12x + 4$  and  $m\angle 3 = 16x - 12$ , then  $m\angle 3 =$  \_\_\_\_\_
- 4) If  $m\angle 5 = 12x - 3$  and  $m\angle 6 = 10x + 9$ , then  $m\angle 4 =$  \_\_\_\_\_
- 5) If  $m\angle 4 = 6x - 16$  and  $m\angle 8 = 2x + 4$ , then  $m\angle 4 =$  \_\_\_\_\_
- 6) If  $m\angle 3 = 18x - 8$  and  $m\angle 6 = 70 - 4x$ , then  $m\angle 6 =$  \_\_\_\_\_
- 7) If  $m\angle 2 = 32^\circ$  and  $DU = 12$ , then  $DA =$  \_\_\_\_\_,  $AU =$  \_\_\_\_\_



**RHOM** is a rhombus. Find the unknown measures. (Treat each problem independently.)

- 8) If  $OB = 2x + 1$  and  $BR = 3x - 10$ , then  $OR =$  \_\_\_\_\_
- 9) If  $RM = 18$ , then  $RH =$  \_\_\_\_\_,  $OH =$  \_\_\_\_\_,  $OM =$  \_\_\_\_\_
- 10) If  $m\angle 2 = 48^\circ$ , then  $m\angle MOH =$  \_\_\_\_\_
- 11) If  $m\angle 7 = 61^\circ$ , then  $m\angle RHO =$  \_\_\_\_\_



**ABCD** is a square. Find the unknown measures. (Treat each problem independently.)

- 12) If  $AE = 3x - 2$  and  $EC = 2x + 3$ , then  $DB =$  \_\_\_\_\_
- 13) If  $AD = 2x - 1$  and  $BC = 5x - 13$ , then  
 $AD =$  \_\_\_\_\_,  $BC =$  \_\_\_\_\_,  $AB =$  \_\_\_\_\_,  $DC =$  \_\_\_\_\_

