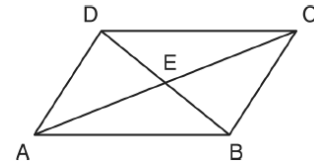


**6.REV.1 – LESSONS 6.1 – 6.3**

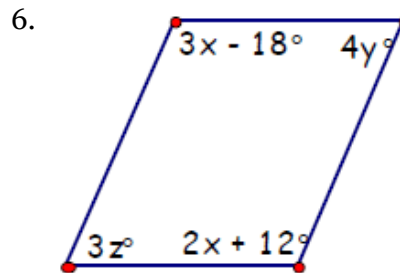
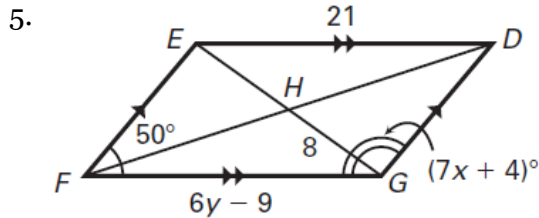
**SHOW ALL WORK ON A SEPARATE SHEET OF PAPER.**

Problems 1 – 4: In parallelogram  $ABCD$ , diagonals  $\overline{AC}$  &  $\overline{DB}$  intersect at  $E$ .



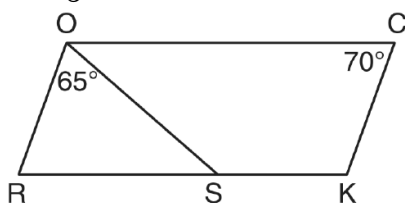
- Which statement is ALWAYS true?
  - $\triangle AED$  is isosceles.
  - $\triangle ABD$  is a right triangle.
  - $\triangle AEB \cong \triangle AED$
  - $\triangle ABC \cong \triangle CDA$
- Which statement is always true?
  - $DB = 0.5CA$
  - $CE = 0.5AC$
  - $\angle CDE \cong \angle CBE$
  - $\angle DAC \cong \angle BAE$
- Which information is NOT enough to prove  $ABCD$  is a parallelogram?
  - $\overline{AB} \cong \overline{CD}$  &  $\overline{DC} \parallel \overline{AB}$
  - $\overline{AB} \cong \overline{CD}$  &  $\overline{BC} \cong \overline{DA}$
  - $\overline{AB} \cong \overline{CD}$  &  $\overline{BC} \parallel \overline{AD}$
  - $\overline{AB} \parallel \overline{DC}$  &  $\overline{BC} \parallel \overline{AD}$
- If  $\overline{DA} \cong \overline{BC}$ , which information would be sufficient to prove quadrilateral  $ABCD$  is a parallelogram?
  - $\overline{DC} \parallel \overline{AB}$
  - $\overline{CB} \parallel \overline{DA}$
  - $\overline{DA} \cong \overline{DC}$
  - $\overline{CB} \cong \overline{AB}$

Use the properties of parallelograms to set up and solve equations to find the value of the variable(s).



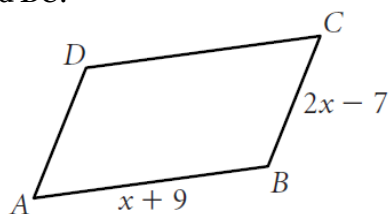
- In parallelogram  $LMNP$ , the ratio of  $LM$  to  $MN$  is 4:3. Find  $LM$  if the perimeter of  $LMNP$  is 28.
- In parallelogram  $ABCD$ , the measures of angles  $A$  and  $B$  are in the ratio 1:8. Find  $m\angle D$ .

9. In parallelogram  $ROCK$ ,  $m\angle C = 70^\circ$  and  $m\angle ROS = 65^\circ$ . What is  $m\angle KSO$ ?

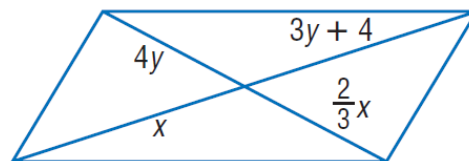


10. In parallelogram  $ABCD$ , diagonals  $\overline{AC}$  &  $\overline{BD}$  intersect at  $E$ . Find  $x$ , if  $BE = 4x - 12$  and  $DE = 2x + 8$ .

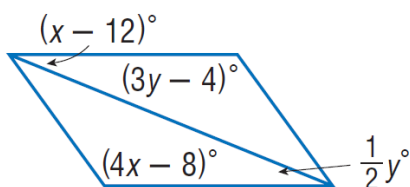
11. Perimeter of  $ABCD = 46$ . Find the value of  $x$ ,  $AB$  and  $BC$ .



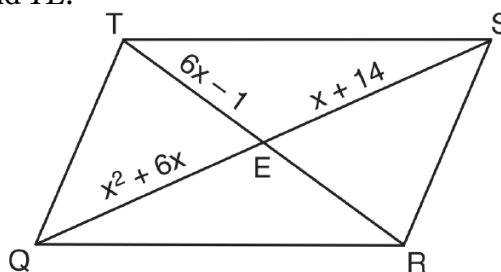
12. Set up and solve a system of equations to find the values of  $x$  and  $y$ .



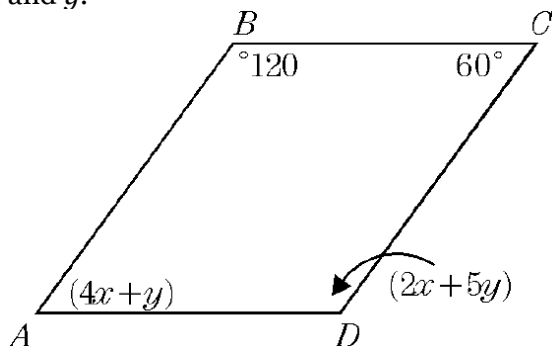
13. Find the values of  $x$  and  $y$  in the parallelogram shown:



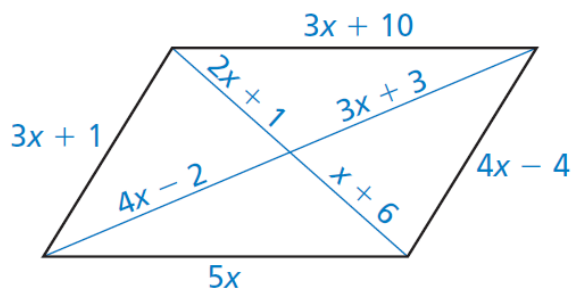
14. The diagonals of parallelogram  $QRST$  intersect at  $E$  and have the given lengths (as shown). Find  $TE$ .



15.  $ABCD$  is a parallelogram with the angle measurements (as shown). Find the values of  $x$  and  $y$ .



16. What value of  $x$  makes the quadrilateral a parallelogram? Explain how you found your answer.



17. In the figure shown the vertices of  $ABCD$  are  $A(-4, -4)$ ,  $B(-2, 2)$ ,  $C(8, 4)$ , &  $D(6, -2)$ . Show that  $ABCD$  is a parallelogram.

