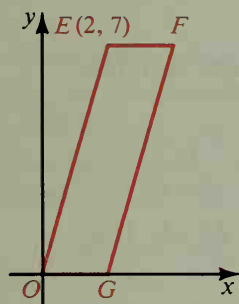


# Written Exercises

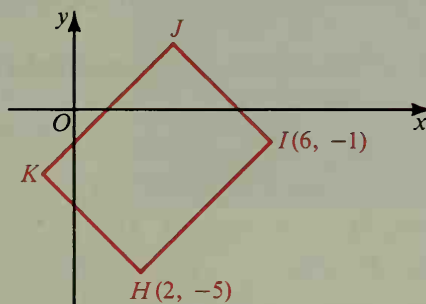
Find the slope of (a)  $\overleftrightarrow{AB}$ , (b) any line parallel to  $\overleftrightarrow{AB}$ , and (c) any line perpendicular to  $\overleftrightarrow{AB}$ .

- A 1.  $A(-2, 0)$  and  $B(4, 4)$       2.  $A(-3, 1)$  and  $B(2, -1)$

3. In the diagram at the left below,  $OEFG$  is a parallelogram. What is the slope of  $\overline{OE}$ ? of  $\overline{GF}$ ? of  $\overline{OG}$ ? of  $\overline{EF}$ ?



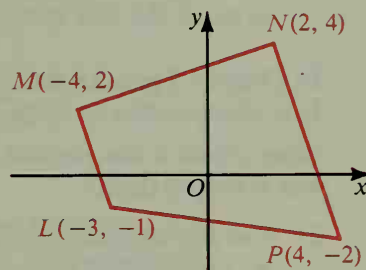
Ex. 3



Ex. 4

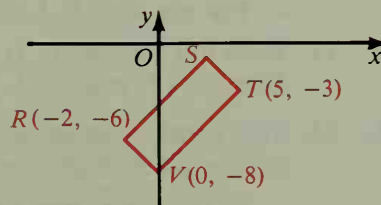
4. In the diagram at the right above,  $HIJK$  is a rectangle. What is the slope of  $\overline{HI}$ ? of  $\overline{JK}$ ? of  $\overline{IJ}$ ? of  $\overline{KH}$ ?

5. a. What is the slope of  $\overline{LM}$ ? of  $\overline{PN}$ ?  
b. Why is  $\overline{LM} \parallel \overline{PN}$ ?  
c. What is the slope of  $\overline{MN}$ ? of  $\overline{LP}$ ?  
d. Why is  $\overline{MN}$  not parallel to  $\overline{LP}$ ?  
e. What special kind of quadrilateral is  $LMNP$ ?



6. Quadrilateral  $RSTV$  is known to be a parallelogram.

- a. What is the slope of  $\overline{RV}$ ? of  $\overline{TV}$ ?  
b. Why is  $\overline{RV} \perp \overline{TV}$ ?  
c. Why is  $\square RSTV$  a rectangle?  
d. Find the coordinates of  $S$ .



Find the slope of each side and each altitude of  $\triangle ABC$ .

7.  $A(0, 0)$   $B(7, 3)$   $C(2, -5)$       8.  $A(1, 4)$   $B(-1, -3)$   $C(4, -5)$

Use slopes to show that  $\triangle RST$  is a right triangle.

9.  $R(-3, -4)$   $S(2, 2)$   $T(14, -8)$       10.  $R(-1, 1)$   $S(2, 4)$   $T(5, 1)$

- B 11. Given the points  $A(-6, -4)$ ,  $B(4, 2)$ ,  $C(6, 8)$ , and  $D(-4, 2)$  show that  $ABCD$  is a parallelogram using two different methods.  
a. Show that opposite sides are parallel.      b. Show that opposite sides are congruent.