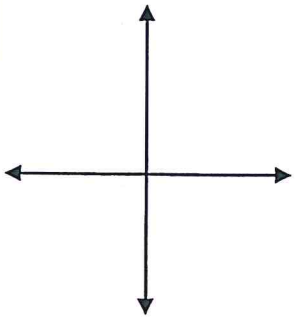
Worksheet 7.3

Name:_____

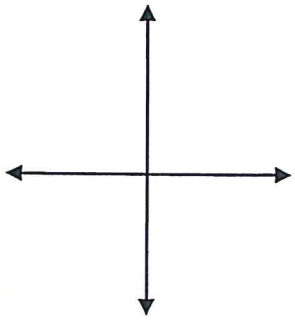
1. Show that the quadrilateral is a parallelogram by showing the diagonals bisect each other theorem (midpoint formula).

   $A(0,1), B(4,4), C(12,4), D(8,1)$



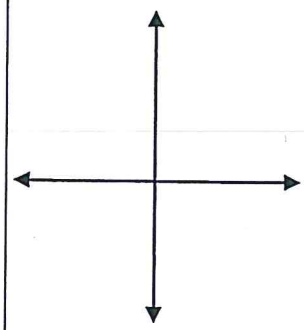
2. Show that the quadrilateral is a parallelogram using both pairs opposite sides of a parallelogram are parallel theorem.

   $E(-3,0), F(-3,4), G(3,-1), H(3,-5)$



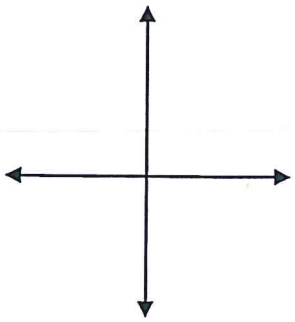
3. Show that the quadrilateral is a parallelogram using one pair of opposite sides is both parallel and congruent theorem.

   $J(-2,3), K(-5,7), L(3,6), M(6,2)$



4. Show that the quadrilateral is a parallelogram using both pairs of opposite sides of a parallelogram are congruent theorem.

   $N(-5,0), P(0,4), Q(3,0), R(-2,-4)$



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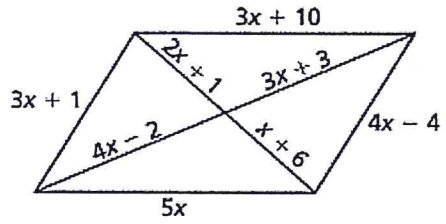
Name:_____

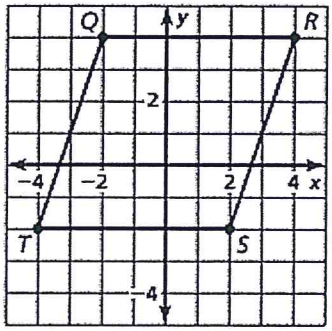
5.

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



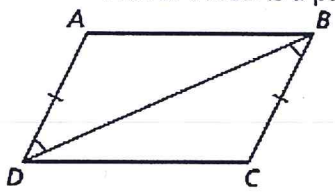
6.

MAKING AN ARGUMENT Your brother says to show that quadrilateral $QRST$ is a parallelogram, you must show that $\overline{QR} \parallel \overline{TS}$ and $\overline{QT} \parallel \overline{RS}$. Your sister says that you must show that $\overline{QR} \cong \overline{TS}$ and $\overline{QT} \cong \overline{RS}$. Who is correct? Explain your reasoning.



7. Given: $\overline{AD} \cong \overline{CB}$
$\angle ADB \cong \angle CBD$

Prove: ABCD is a parallelogram



8. Given: $\angle ADB \cong \angle CBD$
$\angle ABD \cong \angle CDB$

Prove: ABCD is a parallelogram