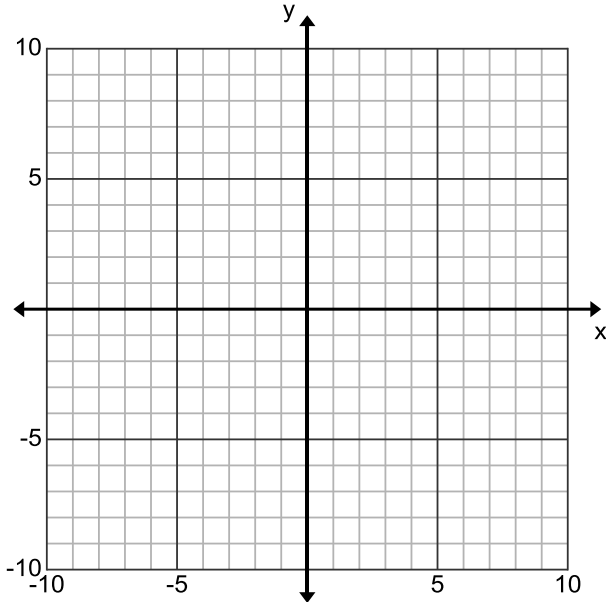
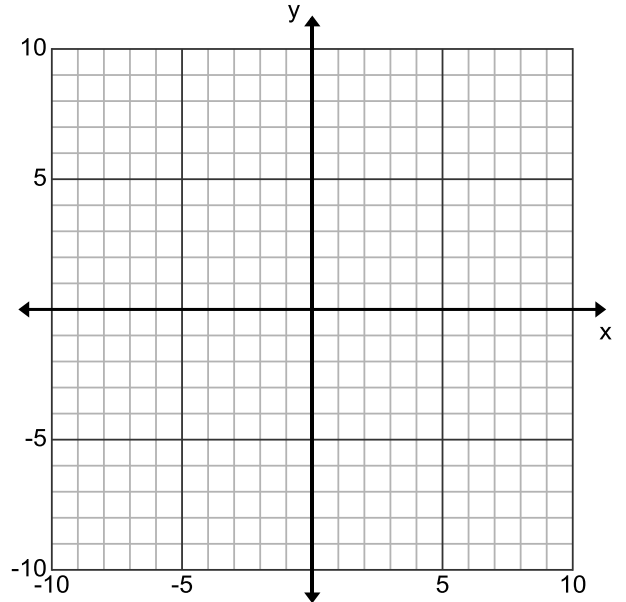


PROBLEM SET 6-11 LAB

1. The vertices of quadrilateral JANE are $J(1, 2)$, $A(10, 5)$, $N(9, 8)$, and $E(0, 5)$. Using coordinate geometry, show that **parallelogram** JANE is a rectangle.



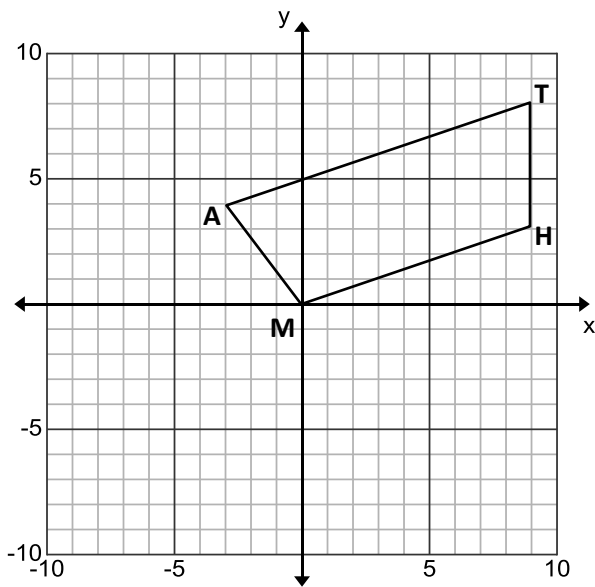
2. The vertices of quadrilateral PQRS are $P(0,2)$, $Q(3,6)$, $R(8,6)$, and $S(5,2)$. Using coordinate geometry, show that **parallelogram** PQRS is a rhombus.



3. In order to prove that a quadrilateral is a square using coordinate geometry, which of the following methods would be valid? Circle either valid or not valid. If a method is not valid, state which type of quadrilateral would be proven.

- | | | |
|--|-------|------------------|
| A Use slope to show both pairs of opposite sides parallel, one set of consecutive sides perpendicular and the diagonals are perpendicular. | VALID | NOT VALID: _____ |
| B Use the distance formula to show all four sides are congruent. | VALID | NOT VALID: _____ |
| C Use the distance formula to show all four sides are congruent and the diagonals are congruent. | VALID | NOT VALID: _____ |
| D Use slope to show all pairs of consecutive sides are perpendicular. | VALID | NOT VALID: _____ |
| E Use the midpoint formula to show diagonals bisect each other. | VALID | NOT VALID: _____ |
| F Use the midpoint formula to show the diagonals bisect each other, slope to show the diagonals are perpendicular, and distance formula to show the diagonals are congruent. | VALID | NOT VALID: _____ |

4. The vertices of quadrilateral MATH are $M(0, 0)$, $A(-3, 4)$, $T(9, 8)$, and $H(9, 3)$. Prove by means of coordinate geometry that **trapezoid** MATH is an isosceles trapezoid.



Write the equation of the line of reflection that maps \overline{MA} onto \overline{HT} : _____