Congruent Segments have the same distance

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Geometry

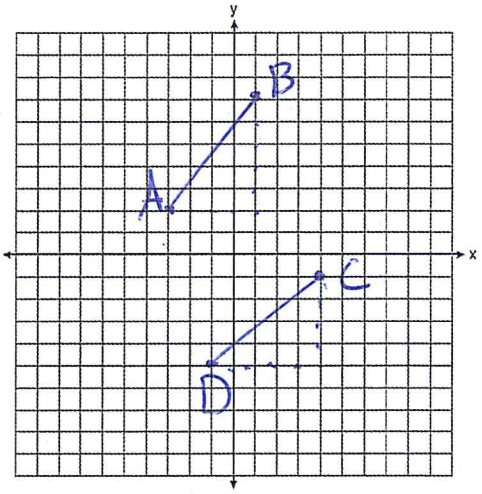
Proving Segments are Congruent

1. A(-3,2) B(1,7) C(4,-1) D(-1, -5)
Prove that $\overline{AB} \cong \overline{CD}$

$\overline{AB} \cong \overline{CD}$ because they have the same distance

$d\overline{AB} = \sqrt{4^2+5^2} = \sqrt{16+25} = \sqrt{41}$

$d\overline{DC} = \sqrt{5^2+4^2} = \sqrt{25+16} = \sqrt{41}$

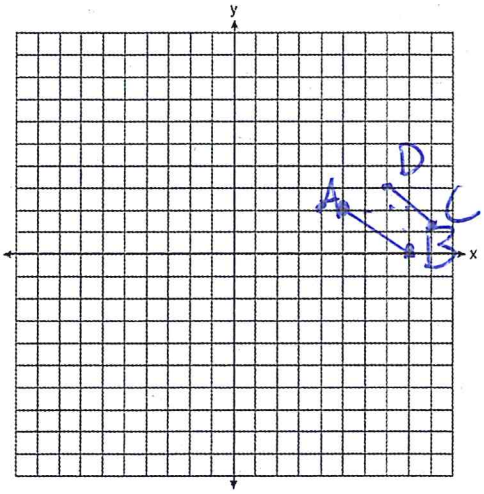


2. A(5,2), B(8,0), C(9,1), and D(7,3)
Prove that $\overline{AB}$ not $\cong \overline{CD}$

$\overline{AB} \ncong \overline{CD}$ because they don't have the same distance

$d\overline{AB} = \sqrt{3^2+2^2} = \sqrt{9+4} = \sqrt{13}$

$d\overline{CD} = \sqrt{2^2+2^2} = \sqrt{4+4} = \sqrt{8}$

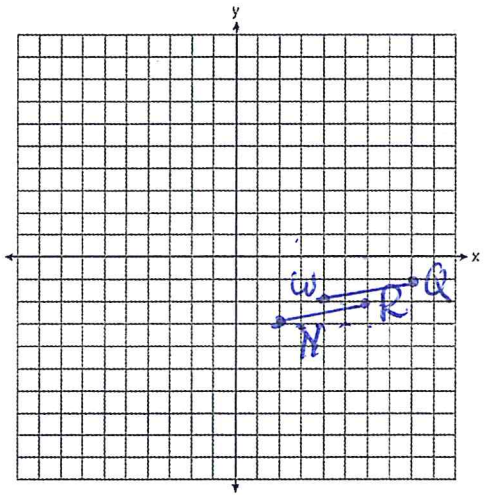


3. N(2,-3), R(6,-2), Q(8,-1), and W(4,-2)
Prove that $\overline{NR} \cong \overline{QW}$

$\overline{NR} \cong \overline{QW}$ because they have the same distance.

$d\overline{NR} = \sqrt{4^2+1^2} = \sqrt{16+1} = \sqrt{17}$

$d\overline{QW} = \sqrt{4^2+1^2} = \sqrt{16+1} = \sqrt{17}$

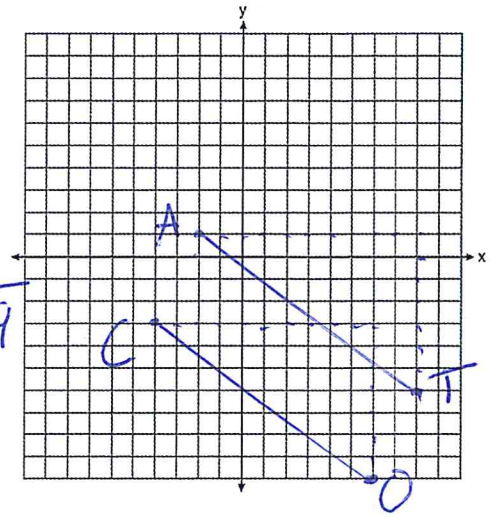


4. T(8,-6), A(-2,1), C(-4,-3), and O(6,-10)
Prove that $\overline{TA} \cong \overline{CO}$

$\overline{TA} \cong \overline{CO}$ because they have the same distance

$d\overline{TA} = \sqrt{10^2+7^2} = \sqrt{100+49} = \sqrt{149}$

$d\overline{CO} = \sqrt{10^2+7^2} = \sqrt{100+49} = \sqrt{149}$

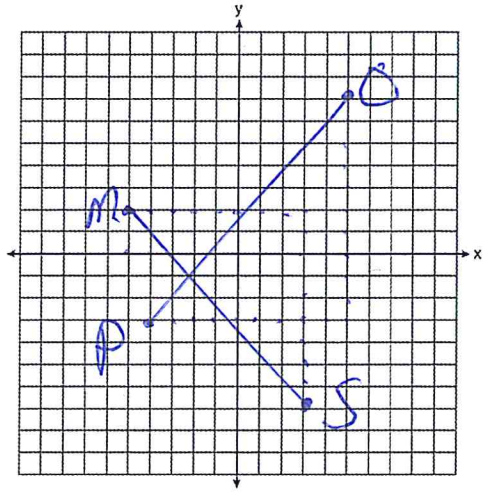


5. M(-5,2), O(5,7), P(-4,-3), and S(3,-7)
Prove that $\overline{MS}$ not $\cong \overline{PO}$

$\overline{MS} \ncong \overline{PO}$ because they don't have the same distance.

$d\overline{MS} = \sqrt{8^2+9^2} = \sqrt{64+81} = \sqrt{145}$

$d\overline{PO} = \sqrt{9^2+10^2} = \sqrt{81+100} = \sqrt{181}$

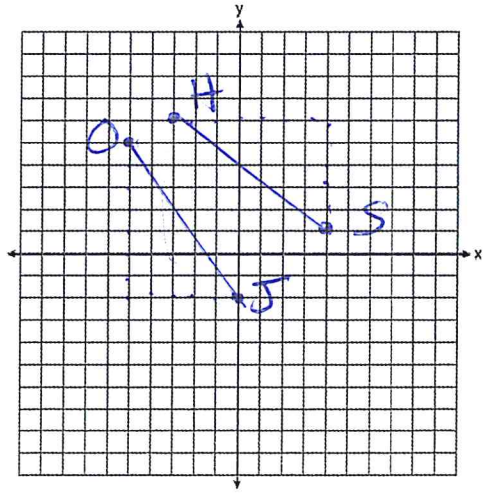


6. J(0,-2), O(-5,5), S(4,1), and H(-3,6)
Prove that $\overline{JO} \cong \overline{SH}$

$\overline{JO} \cong \overline{SH}$ because they have the same distance.

$d\overline{JO} = \sqrt{5^2+7^2} = \sqrt{25+49} = \sqrt{74}$

$d\overline{SH} = \sqrt{7^2+5^2} = \sqrt{49+25} = \sqrt{74}$

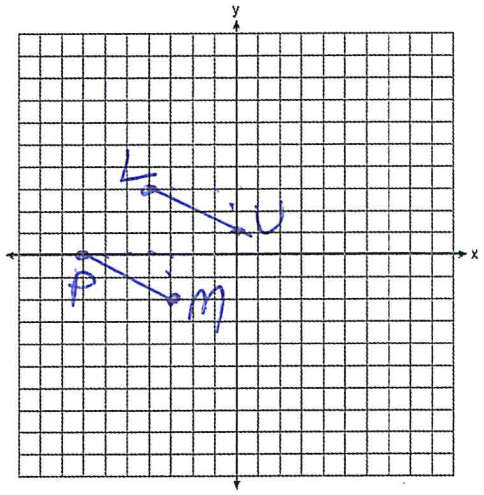


7. P(-7,0), L(-4,3), U(0,1), and M(-3,-2)
Prove that $\overline{PM} \cong \overline{LU}$

$\overline{PM} \cong \overline{LU}$ because they have the same distance

$d\overline{PM} = \sqrt{4^2+2^2} = \sqrt{16+4} = \sqrt{20}$

$d\overline{LU} = \sqrt{4^2+2^2} = \sqrt{16+4} = \sqrt{20}$

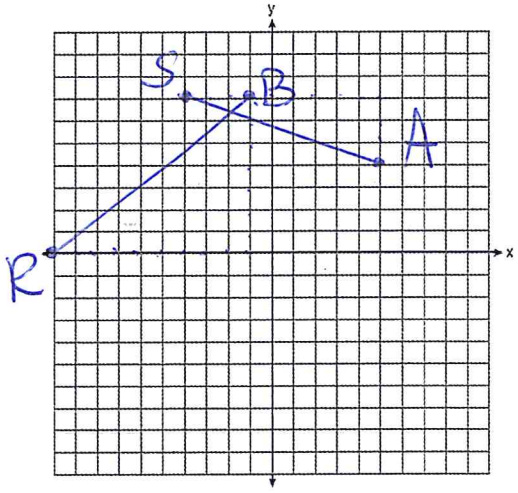


8. S(-4,7), A(5,4), B(-1,7), R(-10, 0)
Prove that $\overline{SA} \cong \overline{BR}$

$\overline{SA} \not\cong \overline{BR}$ because they ~~have~~ don't have the same distance

$d\overline{SA} = \sqrt{9^2+3^2} = \sqrt{81+9} = \sqrt{90}$

$d\overline{BR} = \sqrt{9^2+7^2} = \sqrt{81+49} = \sqrt{130}$



9. M(8,9), I(-1,4), L(3,-1), R(8, 8)
Prove that ~~$\overline{SA} \cong \overline{BR}$~~ $\overline{MI} \cong \overline{LR}$

$\overline{MI} \cong \overline{LR}$ because they have the same distance

$d\overline{MI} = \sqrt{9^2+5^2} = \sqrt{81+25} = \sqrt{106}$

$d\overline{LR} = \sqrt{5^2+9^2} = \sqrt{25+81} = \sqrt{106}$