Accelerated Geometry
Proving Right Triangles Practice

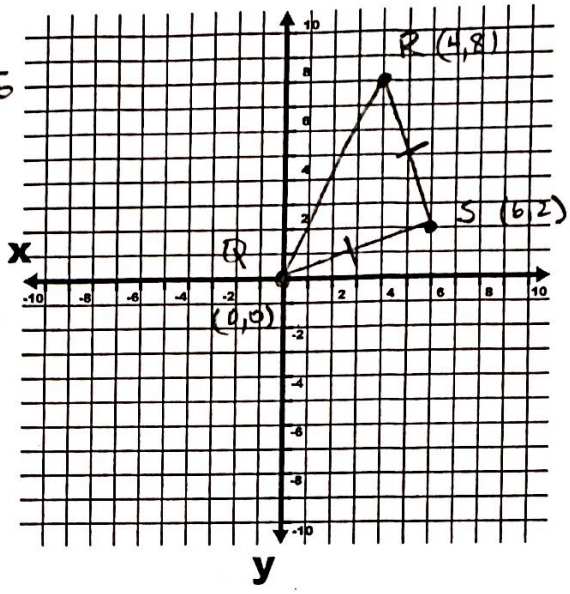
Name Key
Date

1. Triangle QRS has vertices Q(0, 0), R(4, 8) and S(6, 2). Prove using coordinate geometry that QRS is an isosceles triangle.

$\overline{RS} = \sqrt{(6-4)^2 + (2-8)^2} = \sqrt{4+36} = \sqrt{40} = 2\sqrt{10}$

$\overline{SQ} = \sqrt{(6-0)^2 + (2-0)^2} = \sqrt{36+4} = 2\sqrt{10}$

$\overline{RS} = \overline{SQ}$



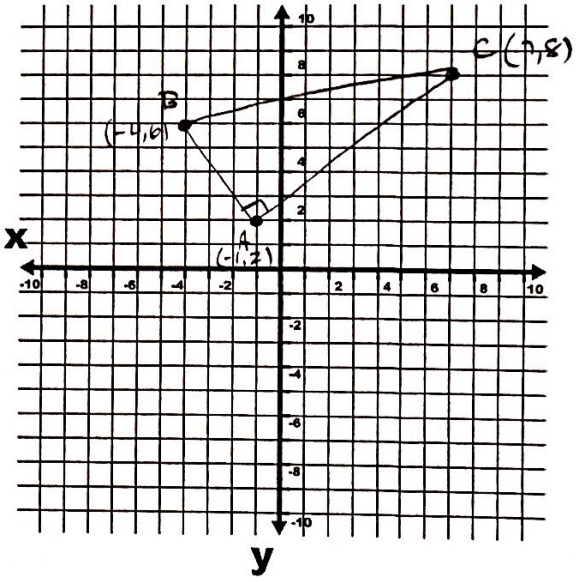
40
4 10
2 2 2

2. Triangle ABC has vertices at A(-1, 2), B(-4, 6) and C(7, 8). Prove that ABC is a right triangle.

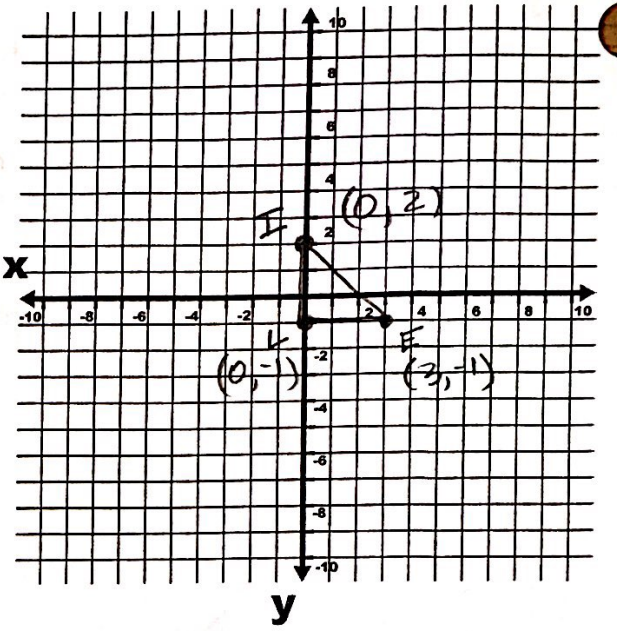
$AB = \frac{6-2}{-4-(-1)} = \frac{4}{-3}$

$AC = \frac{8-2}{7-(-1)} = \frac{6}{8} = \frac{3}{4}$

$AB \perp AC$



3. Triangle ELI has vertices at E(3, -1), L(0, -1) and I(0, 2). Prove ELI is an isosceles right triangle.



slope of $EL = \frac{-1-(-1)}{3-0} = \frac{0}{3} = 0$

slope of $LI = \frac{-1-2}{0-0} = \frac{-3}{0} = \text{und}$

$EL \perp LI$

$\overline{EL} = 3$

$\overline{LI} = 3$

$\overline{EL} = \overline{LI}$