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| **1. Level 1** |
| Prove that quadrilateral *A*(1,2), *B*(2,5), *C*(5,7) and *D*(4,4) is a parallelogram *by using slopes. complete the missing information* |
| http://www.regentsprep.org/Regents/math/geometry/GCG4/PROOGGRAPH1.gif | **Slope formula:http://www.regentsprep.org/Regents/math/geometry/GCG4/Coordi5.gif**

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| --- | --- |
| slope of http://www.regentsprep.org/Regents/math/geometry/GCG4/anspf11.gifhttp://www.regentsprep.org/Regents/math/geometry/GCG4/anspf12.gif | slope of http://www.regentsprep.org/Regents/math/geometry/GCG4/anspf13.gifhttp://www.regentsprep.org/Regents/math/geometry/GCG4/anspf14.gif |
| slope of http://www.regentsprep.org/Regents/math/geometry/GCG4/anspf15.gif | slope of http://www.regentsprep.org/Regents/math/geometry/GCG4/anspf17.gif |

Parallel lines have equal slopes.http://www.regentsprep.org/Regents/math/geometry/GCG4/anspf19.gif*ABCD*is a parallelogram because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_                                                 QED. |

2. Level 2

Prove that quadrilateral LEAP with the vertices

L(-3,1), E(2,6), A(9,5) and P(4,0) is a parallelogram.



3. Level 3

The coordinates of three vertices of a parallelogram are (0,0), (8,5) and (15,7). Which of the following is not a possible fourth vertex?

a) (-7,-2)

b) (-3,-8)

c) (23, 12)

d) (7, 2)

4. Level 3

 

5. Level 3

 Prove that quadrilateral *A*(1,-2), *B*(13,4),
*C*(6,8) and *D*(-2,4) is a trapezoid, but is *NOT* an isosceles trapezoid.