**Proving Triangles Similar**

***Blind Sequencing Activity***

K

G

Given: , ,

Prove:

L

J

H

F

K

Given:

G

Prove:

H

F

J

Given:

K

G

Prove:

H

F

L

J

|  |  |
| --- | --- |
|  | Given |
|  | Given |
|  | Given |
|  | Angle-Angle Similarity Postulate |
|  is isosceles | Definition of an isosceles triangle |
|  is isosceles | Definition of an isosceles triangle |
|  | Base angles of an isosceles triangle are congruent |
|  | Base angles of an isosceles triangle are congruent |

|  |  |
| --- | --- |
|  | Transitive Property of Congruency |
|  | Transitive Property of Congruency |
|  | Given |
|  are alternate interior angles | Definition of alternate interior angles |
|  | If parallel lines are cut by a transversal, then alternate interior angles are congruent |
|  | Vertical angles are congruent |
|  | Angle-Angle Similarity Postulate |
|  |  |

|  |  |
| --- | --- |
|  | Given |
|  | Given |
| Choose a point X on so that *KX* = *GF.* Then draw . | Through a point not on a line, there is exactly one line parallel to the given line |
|  | If parallel lines are cut by a transversal, then corresponding angles are congruent |
|  | Angle-Angle Similarity Postulate |
|  | Corresponding sides of similar triangles are proportional |
|  | Substitution |
|  | Substitution |

|  |  |
| --- | --- |
|  | Substitution |
| *KY* = *GH* | Substitution in proportional relationship |
|  | Side-Angle-Side Theorem of Triangle Congruency  |
|  | Corresponding parts of congruent triangles are congruent |
|  | Transitive property of congruency |
|  | Angle-Angle Similarity Postulate |
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