## Unit 3 Lesson 11: Splitting Triangle Sides with Dilation, Part 2

### 1 Notice and Wonder: Parallel Segments (Warm up)

#### Student Task Statement

What do you notice? What do you wonder?

$\overset{\leftrightarrow }{AC}∥\overset{\leftrightarrow }{MN}$



### 2 Prove It: Parallel Segments

#### Student Task Statement

Does a line parallel to one side of a triangle always create similar triangles?

1. Create several examples. Decide if the conjecture is true or false. If it’s false, make a more specific true conjecture.
2. Find any additional information you can be sure is true.
Label it on the diagram.
* $\overset{\leftrightarrow }{AC}∥\overset{\leftrightarrow }{MN}$
* 
1. Write an argument that would convince a skeptic that your conjecture is true.

### 3 Preponderance of Proportional Relationships

#### Student Task Statement

Find the length of each unlabelled side.

1. Segments $AB$ and $EF$ are parallel.
* $\overset{¯}{AB}∥\overset{¯}{EF},\overset{¯}{AD}⊥\overset{¯}{DB}$
* 
1. Segments $BD$ and $FG$ are parallel. Segment $EG$ is 12 units long. Segment $EB$ is 2.5 units long.
* $\overset{¯}{BD}∥\overset{¯}{FG}$
* 



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