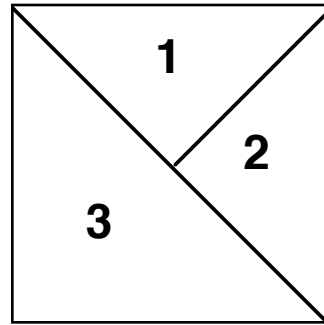
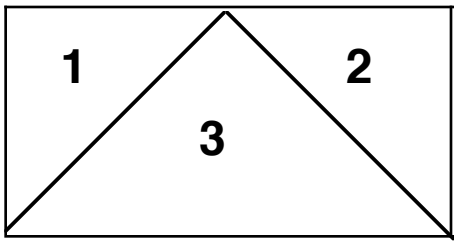


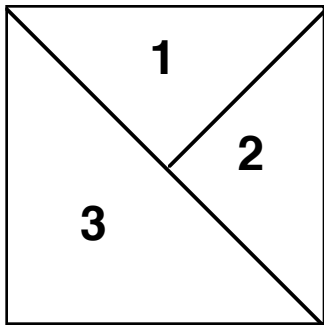
The 3 to 5 to 6 Part Square

Cut the large 6 part square into its 6 parts. Decide if you want to use the blank puzzle parts or the numbered parts. The numbered parts keep you from turning some parts over and make the puzzle impossible to complete. I use the numbered parts and this lets me refer to specific puzzle pieces.

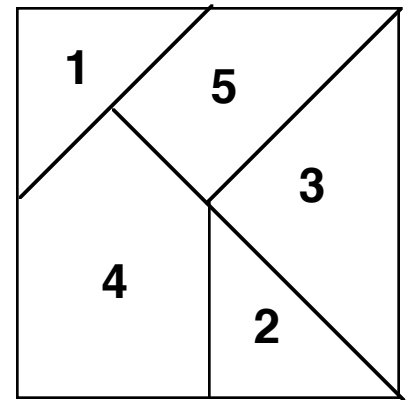
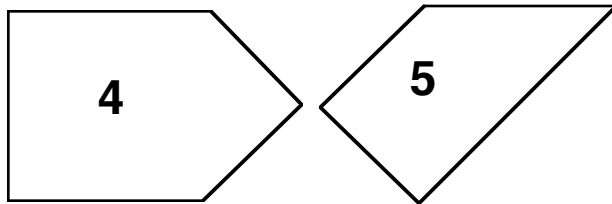
1. Lay out pieces 1, 2 and 3 on a desk (or overhead projector) so that they 3 parts form a rectangle. Ask a student to form a square using the same 3 parts. This will be an easy task. The answer is shown below.



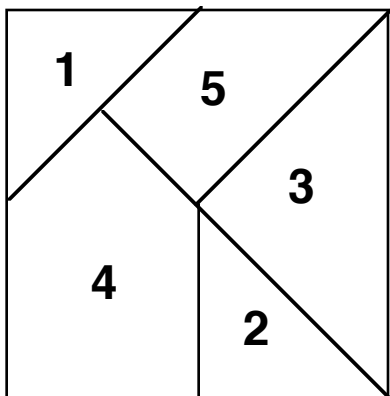
2. Tell them that was a bit too easy and give the student parts 4 and 5 and ask them to use all 5 parts to form a square. This will be a bit more difficult and make take some time. The answer is shown below.



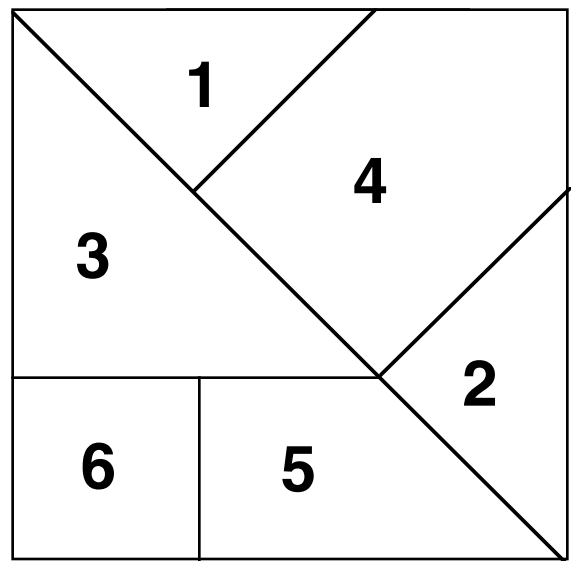
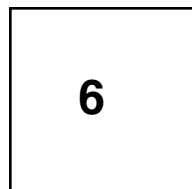
Use these 5 parts to make a square



3. Tell them that they are ready for the real challenge. Give the student part 6 (the square) and ask them to use all 6 parts to form another square. This will be a much more difficult for some students so let them take the necessary time. The answer is shown below.

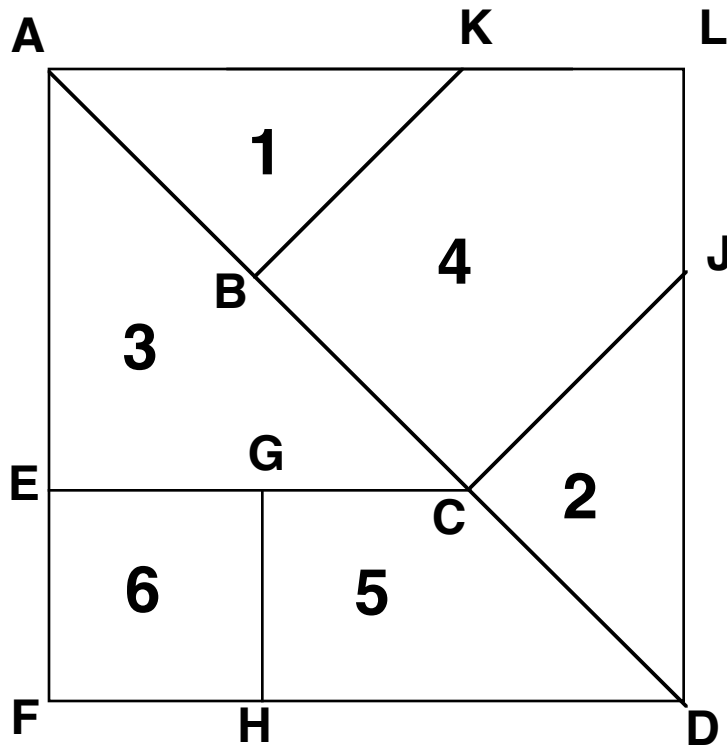


Use these 6 parts to make a square



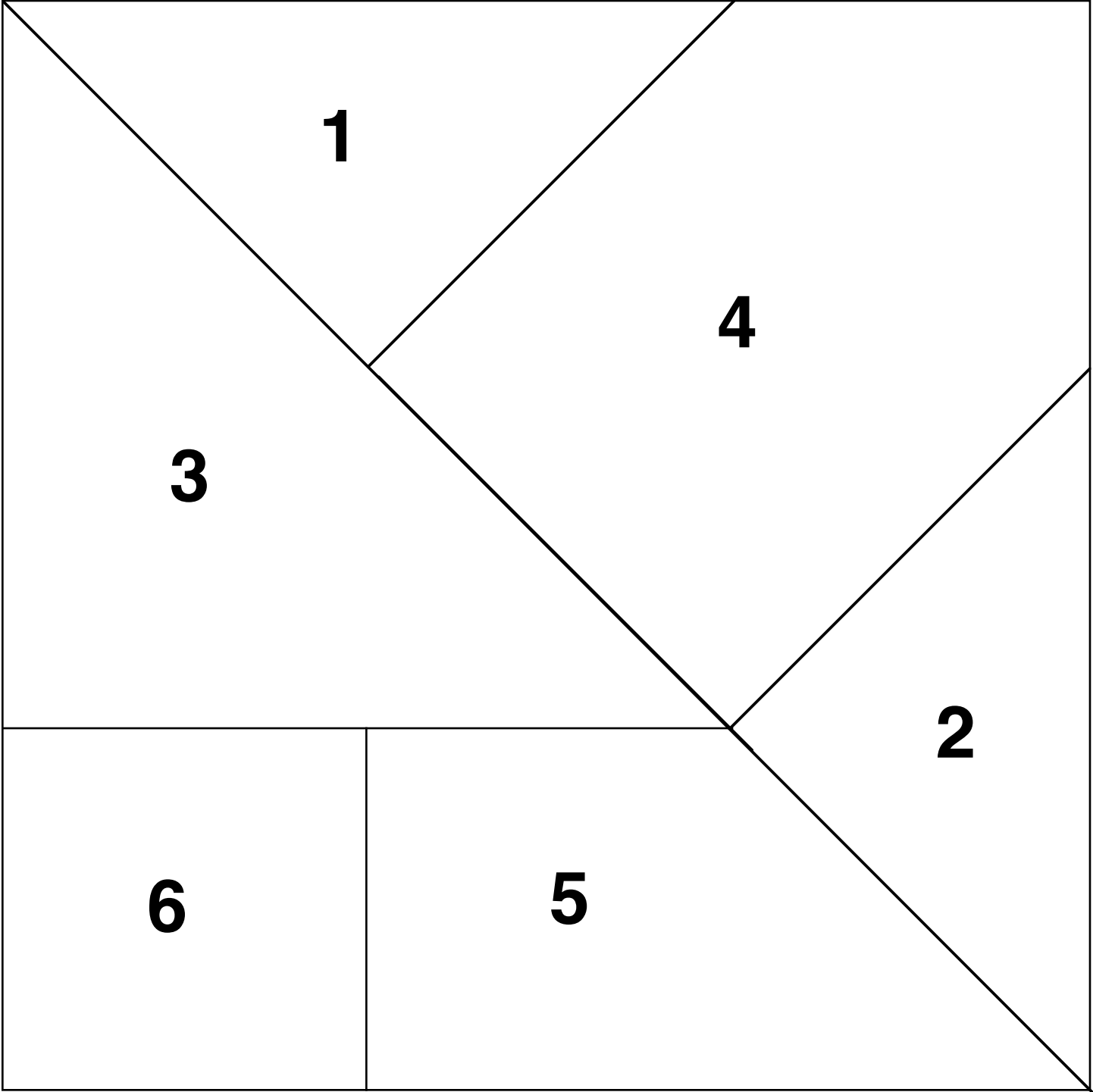
Extra Challenges:

1. Try and have them write out a set of directions for making the puzzle starting with a large square. They may need a hint about trisecting the diagonal of the large square but the rest of the steps should be possible. Be sure they use correct math vocabulary. Decide if you will allow the wording **segment AB** or require the \overline{AB} notation. Decide if you will allow the wording **perpendicular** or require the \perp notation.
2. Ask them to use only a compass and straight edge and have them **CONSTRUCT** the puzzle with no ruler or protractor to measure with.



How to construct the square

1. Construct a **square** ALDF.
2. **Trisect segment AD** into 3 parts. This gives points B and C
3. From point B construct a segment perpendicular to AD that intersects AL at point K.
4. From point C construct a segment perpendicular to AD that intersects LD at point J.
5. From point C construct a segment perpendicular to FD that intersects AF at point E
6. From point E construct a point G on EC that is the same length as segment EF
7. From point F construct a point H on FD that is the same length as segment EF
8. Draw a segment from point G to point H



The 6 Part Square

