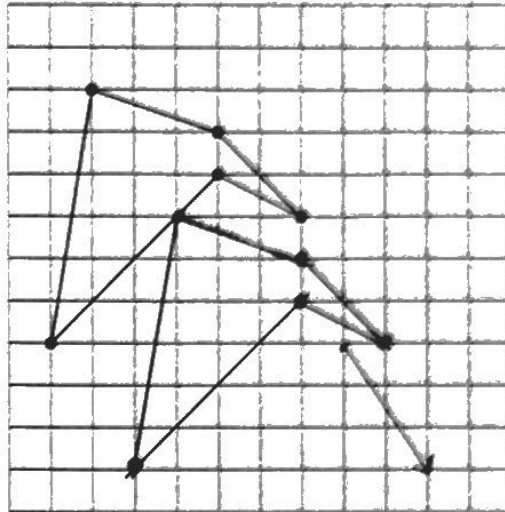


MA 202: Quiz 8

Tuesday 04/09/2018

1. Draw the image of shifting the pentagon below in the direction of the translation vector. 2 units right and 3 units down.



2. For each of the following, determine whether the statement is always true, sometimes true, or never true. Justify your answers.

- (a) In a rotation of a square by 90 degrees, there is at least one point on the square that does not move.

Sometimes True. If the center of rotation lies in the square it is true and otherwise it is false.

- (b) If a triangle is translated up by 5 units, the image is congruent to the original triangle.

Always True. Translations always produce an image congruent to the original shape.

- (c) Pentagons have 180 degree rotational symmetry.

Never True. To have 180° rotational symmetry, we must be able to pair each vertex with an opposite vertex that gets swapped with it in the rotation. So any such shape must have an even number of vertices, but pentagons have 5.