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| **Transformations on the Cartesian Plane** | | | |
| Describes translations, reflections, and rotations about the origin on a Cartesian plane using mapping rules    (*x*, *y*) → (*x* – 20, *y* – 10) | Describes dilations about the origin on a Cartesian plane using mapping rules  Vertices of initial shape: (–2, 2), (–2, –6), (6, –6), and (6, 2).  Vertices of image:  (–1, 1), (–1, –3), (3, –3), and (3, 1).  (*x*, *y*) → (0.5*x*, 0.5*y*) | Performs and describes combinations of transformations  Triangle A is reflected in the *y*-axis and translated left 2 and down 5.    (*x*, *y*) → (–*x*, *y*) then  (*x*, *y*) → (*x* – 2, *y* – 5)  Or (*x*, *y*) → (–*x* – 2, *y* – 5) | Predicts the result of combinations of transformations  Triangle A with vertices at (–2, 1),  (–6, 1), and (–6, 3) is dilated by a scale factor of 2 and translated left 2 and down 5.  Dilation: (*x*, *y*) → (2*x*, 2*y*)  Translation: (*x*, *y*) → (*x* – 2, *y* – 5)  Or, (*x*, *y*) → (2*x* – 2, 2*y* – 5) |
| **Observations/Documentation** | | | |
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