Name Class Date

2.1 Translations

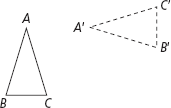
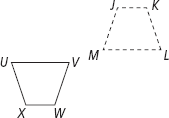
**Tell whether the transformation appears to be a rigid motion. Explain.**

|  |  |
| --- | --- |
| 21**1.**  **Preimage**  **Image** | 43**2.**  **Image**  **Preimage** |
| 65**3.**  **Preimage**  **Image** | 87**4.**  **Preimage**  **Image** |

**In each diagram, the dashed-line figure is an image of the solid-line figure.**

**(a) Choose an angle or point from the preimage and name its image.**

**(b) List all pairs of corresponding sides.**

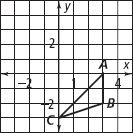
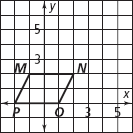


**6.**

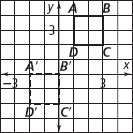
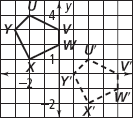
**5.**

**Graph the image of each figure under the given translation.**

|  |  |
| --- | --- |
| **7.** *T*<–1, 4> (Δ*ABC*) | **8.** *T*<3, 3> (*MNOP*) |



**The dashed-line figure is a translation image of the solid-line figure. Write a rule  
to describe each translation.**



**10.**

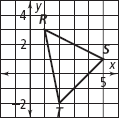
**9.**

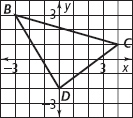
**11.** You are visiting Washington, D.C. From the American History Museum you  
walk 5 blocks east and 1 block south to the Air and Space Museum. Then you  
walk 8 blocks west to the Washington Monument. Where is the Washington  
Monument in relation to the American History Museum? (Hint: Describe the   
movements as a transformation)

**12.** You and some friends go to a book fair where booths are set out in rows. You  
buy drinks at the refreshment stand and then walk 8 rows north and 2 rows  
east to the science fiction booth. Then you walk 1 row south and 2 rows west  
to the children’s book booth. Where is the children’s book booth in relation to  
the refreshment stand?

**13. Reasoning** If *T*<10, 15> *(PQRS*) = *P′Q′R′S′*, what translation maps *P′Q′R′S′*  
onto *PQRS?*

**14.** Δ*XYZ* has coordinates *X*(2, 3), *Y*(1, 4), and *Z*(8, 9). A translation maps *X* to  
*X′*(4, 7). What are the coordinates for *Y′* and *Z′* for this translation?

**15.** Use the graph at the right. Write three different  
translation rules for which the image of Δ*RST*has a vertex at the origin.

**16.** Use the graph at the right. Write three different  
translation rules for which the image of Δ*BCD* has  
a vertex at the origin.

**Graph the image of each figure under the given translation.**

**18.** *T*<–5, 1> (*KLMN*)

**17.** *T*<–3, 4> (Δ*DEF*)

