**Foundations for Algebra**

**Spring Student Enrichment Packet**



***ANSWER KEY***

PRINCE GEORGE’S COUNTY PUBLIC SCHOOLS

Office of Academic Programs

Department of Curriculum and Instruction

**™**

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**Answer Key**

|  |  |
| --- | --- |
| **Problem** | **Answer** |
| 1 Part A | Yes |
|  Part B | Similar |
| 2 | $ 6^{-2}$**,** $6^{(-4+2)}$**,** $\frac{1}{6^{2}}$ |
| 3 | 4 units right and 3 units down OR3 units down and 4 units right |
| 4 | 8.54 units |
| 5 | A |
| 6 Part A | Parallelogram *ABCD* is dilated by a factor of $\frac{1}{2}$ **.**  The height of the parallelogram is 6 units and the base is 6 units. The height and the base of the transformed parallelogram are both 3 units, which is exactly half of the original. |
|  Part B | Yes, the transformation proves similarity because the heights and bases of the two figures are proportional and the angle measures are congruent. A dilation keeps the side lengths proportional and so the figures are similar. |
| 7 | C |
| 8 | 127.3 feet |
| 9 | 5.616 x 106 |
| 10 | The Pythagorean Theorem applies to right triangles, so for the table top to be square, then a2 + b2 = c2. 182 + 362 = 1,620 but 432 = 1,849, so since the two values are not equal, then the angle at the corner is not a right angle.  |
| 11 | C |
| 12. | 11.2 units |
| 13.  | A |
| 14.  | A, E |
| 15. | 3.9 kg |