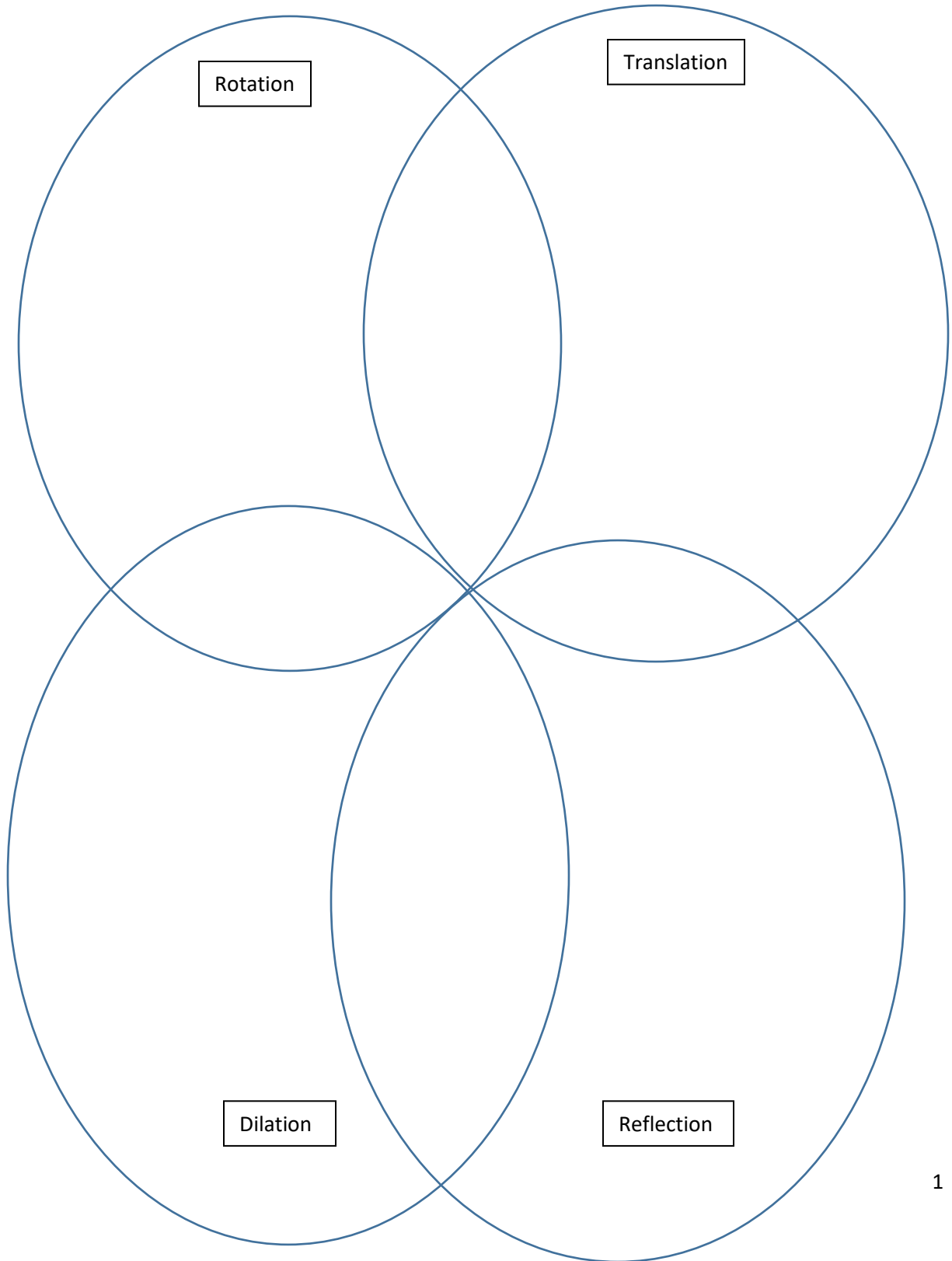


Grade 7 & 8 Team

1. Transformation Card Sort (24 pts)

Write the letter of the transformation in the correct area on the Venn Diagram.



a) Describe the strategy you used in the card sort activity. (3 pts)

b) Describe the general characteristics of the coordinates of each type of transformation. (12 pts)

Rotation	Translation
Dilation	Reflection

c) Classify the following statement as always, sometimes, or never true. Justify your choice. (4 pts)

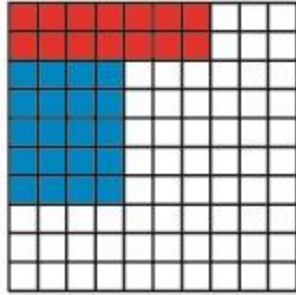
“A series of reflections results in a rotation.”

4. The odometer of the family car shows 15,951 miles. The driver noticed that this number is palindromic: it reads the same backward as forward. "Curious," the driver said to himself. "It will be a long time before that happens again." But 2 hours later, the odometer showed a new palindromic number. How fast was the car traveling in those 2 hours? (7 pts)

5. After the first two terms in the following sequence, each number is the sum of the preceding two terms. Find the missing numbers. Explain how you figured it out. (9 pts)

4 _____ _____ _____ _____ 67

6.



A 10×10 grid is painted with three primary colors (red, yellow, and blue) and three secondary colors (green, purple, and orange). The secondary colors are made by mixing equal parts of the appropriate primary colors - that is, red and yellow are mixed to make orange, red and blue to make purple, and yellow and blue to make green. The figure on the left shows squares that were painted red and

blue. (The top two rows are red; the other colored squares are blue) No other squares were painted either red or blue. Suppose that each small square requires a quart of paint. Altogether, 31 quarts of red paint, 40 quarts of blue paint, and 29 quarts of yellow paint were used to paint the entire 10×10 grid.

Given this information, were there more yellow or purple squares? And how many more? Defend your answer. (9 pts)

7. Helen paid 25 cents for a bag of jellybeans. After giving her brother half the beans, she ate 13. Her sister then ate one more than half the remaining beans, after which there were 3 left. How many jellybeans were in the bag before it was opened? Defend your answer. (7 pts)
8. A marching band needs to raise \$13,500 for a trip to the Rose Bowl. The director told the band members that one-third of the amount that has been raised so far is equal to half of the amount that is still needed. How much more money needs to be raised for the trip? Explain how you figured it out. (7 pts)

9. What is the n th term in the sequence shown below when n is an even number? Explain your thinking. (7 pts)

$$\frac{1}{4} \quad \frac{1}{2} \quad \frac{1}{16} \quad \frac{1}{8} \quad \frac{1}{64} \quad \frac{1}{32}$$

10. Three burglars were caught breaking into a store. When questioned by the police, at least one of the 3 told the truth and at least one of the 3 lied. The statements made were as follows:

Bob: It was Ken's idea

Ken: That right, it was my idea.

Barb: IT wasn't my idea

Show why it could not have been Barb's idea to rob the store. (5 pts)