Name_____ Date _____

Chapter 7

Performance Task (continued)

Matte Artist

When you watch a movie, do you ever wonder how action-packed scenes and breathtaking views are filmed? Today, these visual effects are often made using computers. But how were visual effects added to movies before computers were so common? Did filmmakers build large-scale sets or travel to faraway places to film scenes? How can math be used to create visual effects?

In the early 1900s, filmmakers started using special techniques to create their films. In one technique, part of a scene is painted on a glass matte. The painted glass matte is combined with live action to create the entire scene.

A filmmaker wants to shoot a scene of a character standing in front of the sculpture of President Lincoln's eye on Mount Rushmore. A painted glass matte is used to create part of the scene. The painting on the glass matte must be a scale painting of the actual sculpture.

The approximate dimensions of some of the features of the sculpture are shown below.

Mount Rushmore National Memorial	
Actual height of each face:	60 feet
Actual length of each nose:	20 feet
Actual width of each eye:	11 feet
Actual width of each mouth:	18 feet

1. In the painting, the faces are 18 inches tall. What is the scale and scale factor of the painting?

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Chapter 7

Performance Task (continued)

Matte Artist

2. Use the scale factor you found in Exercise 1 to find each of the following dimensions in the painting.

a. Length of each nose

b. Width of each eye

c. Width of each mouth

3. In the painting, the width of the sculpture is 55.5 inches. What is the actual width of the sculpture?

4. Mount Rushmore is 5725 feet tall. You have a glass matte that is 6 feet tall. Using the scale factor you found in Exercise 1, will the entire height of Mount Rushmore fit on the glass matte? Explain.

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Chapter 7

Performance Task (continued)

Matte Artist

5. The filmmaker wants to zoom in on the actor who is standing in front of the sculpture of President Lincoln's left eye. The actor is 5 feet tall and the eye is 6 feet tall (from bottom to top of the eye lid). Create a scale drawing of the actor and the eye on the grid. Use the top left square to show what each square represents in your scale drawing. You may use any scale as long as the drawing fits on the grid. Label the height of the actor, the height of the eye, and the width of the eye with their actual dimensions.