Name_____ Date_____

The View Matters

The way an equation or expression is written can help you interpret and solve problems. Which representation would you rather have when trying to solve for specific information? Why?

For each setting, there is a set of expressions that you might use in each situation. Select the expression that will best help you answer the question. Finish the problem and explain why the selection you made was the best choice.

1. Find the height of the parabolic balloon arch for the prom when the position of the bottom anchors are at $x = 3$ feet and $x = 7$ feet.

   A. $-1.5(x - 3)(x - 7)$

   B. $\dfrac{318(3 - x)(x - 7)}{212}$

   C. $-31.5 + 15x - 1.5x^2$

   D. $-\dfrac{3}{2}(x^2 - 10x + 21)$

2. Find the total footage of the fence that surrounds a garden with width $(2x + 3)$ meters and length $(3x - 5)$ meters when $x = 6$.

   A. $2x + 3 + 3x - 5 + 2x + 3x - 5$

   B. $(2x + 3)(3x - 5)$

   C. $10x - 4$

   D. $2(2x + 3) + 2(3x - 5)$

3. You throw a tennis ball straight down from the top of a building with an initial velocity of -30 feet per second. The time (in seconds) after you throw the ball is represented by t. Find the height (in feet) of the building.

   A. $-2(8t^2 + 15t - 75)$

   B. $-8t^2 - 10t + 80 - 8t^2 - 20t + 70$

   C. $-16t^2 - 30(t - 5)$

   D. $-16t^2 - 30t + 150$

Chapter 7 Performance Task (continued)

The View Matters

4. Find the volume of an aquarium with width x centimeters, height $(4x + 5)$ centimeters, and length $(10x - 7)$ centimeters, when the width is 32 centimeters.

   A. $x(4x + 5)(10x - 7)$

   B. $x + 4x + 5 + 10x - 7$

   C. $6x^3 - x^2 - 15x$

   D. $15x - 2$

5. Find the area of a farmer's field with width $(3x + 5)$ yards and length $(4x - 1)$ yards, when the width is 35 yards.

   A. $x(12x + 17) - 1$

   B. $(3x + 5)(4x - 1)$

   C. $12x^2 + 17x - 1$

   D. $2(3x + 5) + 2(4x + 1)$

6. Find the new area of a rectangular swimming pool when the original length, 20 meters, is decreased by x meters, and the original width, 15 meters, is increased by x meters, when $x = 3$.

   A. $2(20 - x) + 2(15 + x)$

   B. $300 - x^2$

   C. $(20 - x)(15 + x)$

   D. $300 + 5x - x^2$

7. Compare your answers with your team or partner. Describe one of the problems where you had different answers. Did either of you change your mind about your answer? Why or why not?

Chapter 7 **Performance Task** (continued)

Teacher Notes: