Algebra Readiness SBAC Practice 9 Name _____ Date _____ Period ___

Part A: Exponents [8.EE.1]

1. For the equation shown, **determine** the value of *n* that makes the equation true.

$2^n \bullet 2^7 = 2^{12}$

Justify your response with the appropriate property.

2. Alex is rewriting the expression $7^3 \bullet 7^5$ in an equivalent form. Their steps are shown.

Step 1: $7^3 \bullet 7^5$

Step 2: $7^{3+5} \bullet 7^1$

Step 3: $7^8 \bullet 7^1$

Step 4: 7^9

Explain the error in Alex's work:

3. A large store receives a shipment of 8^5 packaged toys. Each row of shelves can hold 8^3 packaged toys.

Determine how many rows of shelves will be needed to hold all the packaged toys received.

4. **Rewrite** the expression $\left(3^5 \bullet 3^{-2}\right)^2$ using as few exponents as possible.

5. **Provide** a counter example to the claim that: $\frac{8^x}{4^x} = 2$

Part B: Scientific Notation [8.EE.4]

6. **Compare** the quantities 4×10^3 and 4×10^9. Which is larger? By what factor?

7. A new website is experiencing growth in internet traffic. The day the website launched, 8×10^3 people visited the website. On a particularly busy day a few months later, 8×10^7 people visited the page. **Determine** how many more people visited the page compared to the day the website launched.