**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Seeing Structure in Expressions (A.SSE.3c)**

A worker earned a 2% increase in her annual salary for each of 4 years. She plans to continue working in her position for an additional *n* years. If she continues to earn a 2% increase in her annual salary, which statement describes the expression that can be used to calculate the total percent increase in her annual salary from the first year to the last year?

|  |  |  |
| --- | --- | --- |
| Statement | Yes or No | Explain your thinking |
| The expression $1.02^{(4n)} $can be used because $(1.02^{4})^{n}= 1.02^{(4n)}$ |  |  |
| The expression $1.02^{(4n)} $can be used because $1.02^{4}× 1.02^{n}= 1.02^{(4n)}$ |  |  |
| The expression $1.02^{(4+n)} $can be used because $1.02^{4}× 1.02^{n}= 1.02^{(4+n)}$ |  |  |
| The expression $1.02^{(4+n)} $can be used because $1.02^{4}+ 1.02^{n}= 1.02^{(4+n)}$ |  |  |

Source:

<https://assessmentresource.org/wp-content/uploads/2019/07/Integrated_Math_1_EOY_Item_Set-1.pdf>

Integrated Math I EOY, Spring 2015, Item M40257