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

**Which is the best deal?**

**Due Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_**

**Criterion B Achievement Level: \_\_\_\_\_\_\_\_\_\_**

**Criterion D Achievement Level: \_\_\_\_\_\_\_\_\_\_**

***I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, have not given or received help on this assignment nor have I***

*(student signature above)*

***used any resources other than my own knowledge to complete this task.***

***Objective:*** *Students will identify relevant information, select and use appropriate mathematical strategies and models to solve authentic real life problems, and justify the accuracy and reasonableness of their solutions.*

***PROBLEM***:

Joanna has been waiting for her favorite boots to go on sale. DSW is having their winter boots sale and all boots are 30% off! Joanna is a DSW rewards member, and has a coupon for $15 off. Should she ask her sales person to use the coupon first then the 30% discount, or visa versa. Help her to decide.

1. Which option is the better deal? How do you know? Show all of your work below.
2. Is there a price for the boots that would result in Joanna paying the same price where the order coupon or discount does not matter? If so, what is it? **How** do you know? Support your argument.
3. (Extension): Joanna’s mom is in the military, and DSW offers an extra 10% off for all military families every Tuesday. How would this third option affect her decision? Use a separate sheet of paper to explore Joanna’s options.

**IBMYP Criterion B: Investigating Patterns**

i. **select** and **apply** mathematical problem-solving techniques to discover complex patterns

ii. **describ**e patterns as general rules consistent with findings

iii. **prove**, or **verify** and **justify**, general rules

|  |  |
| --- | --- |
| **Achievement level** | **Descriptor** |
| **0** | The student does not reach a standard described by any of the descriptors given below |
| **1 – 2** | The student is able to:  i. **apply**, with teacher support, mathematical problem-solving techniques to discover simple patterns  ii. **state** predictions consistent with patterns |
| **3 – 4** | The student is able to:  i. **apply** mathematical problem-solving techniques to discover simple patterns  ii. **suggest** general rules consistent with findings |
| **5 – 6** | The student is able to:  i. **selec**t and **apply** mathematical problem-solving techniques to discover complex patterns  ii. **describe** patterns as general rules consistent with findings  iii. **verify** the validity of these general rules |
| **7 – 8** | The student is able to:  i. **selec**t and **apply** mathematical problem-solving techniques to discover complex patterns  ii. **describe** patterns as general rules consistent with findings  iii. **prove,** or **verify** and **justify,** these general rules. |

**IBMYP Criterion D: Applying mathematics in real-life contexts**

i. **identify** relevant elements of authentic real-life situations

ii. **select** appropriate mathematical strategies when solving authentic real-life situations

iii. **apply** the selected mathematical strategies successfully to reach a solution

iv. **justify** the degree of accuracy of a solution

v. **justify** whether a solutions makes sense in the context of the authentic real-life situation.

|  |  |
| --- | --- |
| **Achievement level** | **Descriptor** |
| **0** | The student does not reach a standard described by any of the descriptors given below |
| **1 – 2** | The student is able to:  i. **identify** some of the elements of the authentic real-life situation  ii. **apply** mathematical strategies to find a solution to the authentic real-life situation, with limited success |
| **3 – 4** | The student is able to:  i. **identify** the relevant elements of authentic real-life situation  ii. **select,** with some success, adequate mathematical strategies to model the authentic real-life situation  iii. **apply** the mathematical strategies to reach a solution to the real-life situation  iv. **discuss** whether the solution makes sense in the context of the authentic real-life situation. |
| **5 – 6** | The student is able to:  i. **identify** the relevant elements of authentic real-life situation  ii. **select** adequate mathematical strategies to model the authentic real-life situation  iii. **apply** the selected mathematical strategies to reach a valid solution to the real-life situation  iv. **explain** the degree of accuracy of a solution  v. **explain** whether the solution makes sense in the context of the authentic real-life situation. |
| **7 – 8** | The student is able to:  i. **identify** the relevant elements of authentic real-life situation  ii. **select** appropriate mathematical strategies to model the authentic real-life situation  iii. **apply** the selected mathematical strategies to reach a correct solution to the real-life situation  iv. **justify** the degree of accuracy of a solution  v. **justify** whether the solution makes sense in the context of the authentic real-life situation. |