**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.

a. Which option is the better deal? How do you know? Show all of your work below.

b. 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.

c. (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:<br>i. **apply**, with teacher support, mathematical problem-solving techniques to discover simple patterns<br>ii. **state** predictions consistent with patterns |
| **3 – 4** | The student is able to:<br>i. **apply** mathematical problem-solving techniques to discover simple patterns<br>ii. **suggest** general rules consistent with findings |
| **5 – 6** | The student is able to:<br>i. **selec**t and **apply** mathematical problem-solving techniques to discover complex patterns<br>ii. **describe** patterns as general rules consistent with findings<br>iii. **verify** the validity of these general rules |
| **7 – 8** | The student is able to:<br>i. **selec**t and **apply** mathematical problem-solving techniques to discover complex patterns<br>ii. **describe** patterns as general rules consistent with findings<br>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:<br>i. **identify** some of the elements of the authentic real-life situation<br>ii. **apply** mathematical strategies to find a solution to the authentic real-life situation, with limited success |
| **3 – 4** | The student is able to:<br>i. **identify** the relevant elements of authentic real-life situation<br>ii. **select,** with some success, adequate mathematical strategies to model the authentic real-life situation<br>iii. **apply** the mathematical strategies to reach a solution to the real-life situation<br>iv. **discuss** whether the solution makes sense in the context of the authentic real-life situation. |
| **5 – 6** | The student is able to:<br>i. **identify** the relevant elements of authentic real-life situation<br>ii. **select** adequate mathematical strategies to model the authentic real-life situation<br>iii. **apply** the selected mathematical strategies to reach a valid solution to the real-life situation<br>iv. **explain** the degree of accuracy of a solution<br>v. **explain** whether the solution makes sense in the context of the authentic real-life situation. |
| **7 – 8** | The student is able to:<br>i. **identify** the relevant elements of authentic real-life situation<br>ii. **select** appropriate mathematical strategies to model the authentic real-life situation<br>iii. **apply** the selected mathematical strategies to reach a correct solution to the real-life situation<br>iv. **justify** the degree of accuracy of a solution<br>v. **justify** whether the solution makes sense in the context of the authentic real-life situation. |