Two students got together to discuss their homework. On two problems, they were surprised to find that they had done the problem differently, but got the same answer. The two problems and the solution methods are shown below. For each one, answer the following questions: Would both of the methods always work? If so, explain why they are equivalent. If not, explain why.

1. A coat is priced at $79 plus 7% tax. What is the total cost with tax?

|  |  |
| --- | --- |
| **Robert’s Solution** | **Denae’s Solution** |
| 79 x .07 = 5.53  79 + 5.53 = 84.53  Total cost of the coat is $84.53 | 79 x 1.07 = 84.53  Total cost of the coat is $84.53 |

1. A TV that is regularly priced at $350 is on sale for 30% off. What is the sale price?

|  |  |
| --- | --- |
| **Robert’s Solution** | **Denae’s Solution** |
| 350 x .30 = 105  350 – 105 = 245  The sale price of the TV is $245. | 350 x .70 = 245  The sale price of the TV is $245. |

Robert and Denae did a third problem differently and got different answers. Decide which of the two is correct. Then explain why the incorrect method doesn’t work.

1. A pair of jeans was priced at $59. The store discounted them 25%. Then the store had a clearance sale in which everything was an additional 10% off. What is the new price?

|  |  |
| --- | --- |
| **Robert’s Solution** | **Denae’s Solution** |
| 59 x .25 = 14.75  59 – 14.75 = 44.25  44.25 x .10 = 4.42  44.25 – 4.42 = 39.83  The sale price is $39.83. | 25% + 10% = 35%  59 x .75 = 44.25  The sale price is $44.25 |

**Tiles and Spreadsheets with Percent**

Earlier in this course, you wrote expressions to calculate the cost of the tiles for your different designs. However, you have to charge customers more than just the cost of the materials so that you can cover the cost of shipping, storage, breakage and also make a small profit so you mark-up the prices by 45%. Complete the third column below by writing the expression for the 45% mark-up in price. (Leave last column blank for now.)

**Regular Pricing**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of design** | **Expression for the Cost of the Unit** | **Expression for the Price to Customer** | **Price to customer** |
| Sunrise Border | 2Rb+2Z+H |  |  |

You have a special discount for veterans. You give them a 10% discount off of the regular price. Complete the third column below by writing the expression that will calculate both the initial mark-up and the subsequent discount. (Leave last column blank for now.)

**Veterans Pricing**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of design** | **Expression (Unit)** | **Expression for the Price to Veterans** | **Price to Veterans** |
| Sunrise Border | 2Rb+2Z+H |  |  |

Open the Excel spreadsheet, “Spreadsheets with percent”. Sheet 1 has the spreadsheet for the regular customer pricing and Sheet 2 is for the veteran pricing.

1. Enter the formulas to calculate the prices for the Sunrise Border.
2. Record the prices above.
3. Complete the tables below by writing the expressions and using the spreadsheet to calculate the prices. This may be completed for homework.

**Regular Pricing – on Sheet 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of design** | **Expression for the Cost of the Unit** | **Expression for the Price to Customer** | **Price to customer** |
| Butterfly Border | 2Z + H |  |  |
| Daisy | H + 6Rw |  |  |

**Veterans Pricing – on Sheet 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of design** | **Expression for the Cost of the Unit** | **Expression for the Price to Customer** | **Price to customer** |
| Butterfly Border | 2Z + H |  |  |
| Daisy | H + 6Rw |  |  |