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| **Discount and Sale Price** |  |  |

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| Problem: | In a video store, a DVD that sells for $15 is marked "10% off." What is the discount? What is the sale price of the DVD? | http://www.mathgoodies.com/lessons/percent/images/dvd2.gif |
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| Analysis:  | Stores often sell goods for a discounted price. Typically, a store will discount an item by a percent of the original price. In this problem, an item that originally costs $15 is being discounted by 10%. So "10% off" refers to the rate of discount. To solve this problem, we need a procedure. |

**Procedure:**

1. The rate is usually given as a percent.
2. To find the discount, multiply the rate by the original price.
3. To find the sale price, subtract the discount from original price.

Now that we have a procedure, we can solve the problem above.

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| Problem: | In a video store, a DVD that sells for $15 is marked, "10% off". What is the discount? What is the sale price of the DVD? | http://www.mathgoodies.com/lessons/percent/images/dvd2.gif |
| Solution: | The rate is 10%. |
|  | The discount is: 0.10 x $15.00 = $1.50 |
|  | The sale price is calculated as follows:

|  |  |  |
| --- | --- | --- |
| $15.00 |  | original price |
| **-**     1.50 |  | **-**discount |
|     $13.50 |  |     sale price |

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| Answer: | The discount is $1.50 and the sale price is $13.50. |

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| Let's take a look at some more examples of calculating discount and sale price. |

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| Example 1: | In a department store, a $40 dress is marked, "Save 25%." What is the discount? What is the sale price of the dress? | http://www.mathgoodies.com/lessons/percent/images/dress.gif |
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| Analysis:  | The phrase, "Save 25%," refers to the rate. |
|  | The original price of the dress is $40. |
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| Solution: | The rate is 25%. |
|  | The discount is: 0.25 x $40.00 = $10.00 |
|  | The sale price is calculated as follows:

|  |  |  |
| --- | --- | --- |
| $40.00 |  | original price |
| **-**    10.00 |  | **-**discount |
|     $30.00 |  |     sale price |

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| Answer: | The discount is $10.00 and the sale price is $30.00. |

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| Example 2: | In a grocery store, a $12 case of soda is labeled, "Get a 20% discount." What is the discount? What is the sale price of the case of soda? | http://www.mathgoodies.com/lessons/percent/images/soda.gif |
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| Analysis:  | The phrase, "Get a 20% discount," refers to the rate. |
|  |
| Solution: | The rate is 20%. |
|  | The discount is: 0.20 x $12.00 = $2.40 |
|  | The sale price is calculated as follows:

|  |  |  |
| --- | --- | --- |
| $12.00 |  | original price |
| **-**    2.40 |  | **-**discount |
|     $ 9.60 |  |     sale price |

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| Answer: | The discount is $2.40 and the sale price is $9.60. |

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| Example 3: | In a candy store, a $5.00 jar of candy is labeled, "50% off." What is the discount? What is the sale price of the jar of candy? | http://www.mathgoodies.com/lessons/percent/images/marbles_jar.gif |
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| Analysis:  | The phrase, "50% off," refers to the rate. |
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| Solution: | The rate is 50%. |
|  | The discount is: 0.50 x $5.00 = $2.50 |
|  | The sale price is calculated as follows:

|  |  |  |
| --- | --- | --- |
| $5.00 |  | original price |
| **-**    2.50 |  | **-**discount |
|     $2.50 |  |     sale price |

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| Answer: | The discount is $2.50 and the sale price is $2.50. |

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| In Example 3, note that the discount and the sale price are the same amount! Do you know what fraction is equal to 50%? Could you have done this problem using mental math? The phrase, "50% off," is the same as, "1/2 off". So using mental math, you would get that one-half of $5.00 is $2.50. Let's look at another example that uses a fraction. |

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| Example 4: | A pizzeria has a coupon that reads, "Get http://www.mathgoodies.com/lessons/percent/images/1_over_3.gif off a $9.00 cheese pizza." What is the discount? What is the sale price of the cheese pizza? | http://www.mathgoodies.com/lessons/percent/images/pizza.jpg |
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| Analysis:  | The phrase, "http://www.mathgoodies.com/lessons/percent/images/1_over_3.gif off," refers to the rate. It is expressed as a fraction. |
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| Solution: | The rate is given as the fraction http://www.mathgoodies.com/lessons/percent/images/1_over_3.gif. |
|  | The discount is: http://www.mathgoodies.com/lessons/percent/images/1_over_3.gif x $9.00 = $3.00 |
|  | The sale price is calculated as follows:

|  |  |  |
| --- | --- | --- |
| $9.00 |  | original price |
| **-**    3.00 |  | **-**discount |
|     $6.00 |  |     sale price |

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| Answer: | The discount is $3.00 and the sale price is $6.00. |

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| Once again, you could calculate the discount and sale price using mental math. Let's look at another way of calculating the sale price of an item. Below is a modified version of the problem from the top of this page. |

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| Example 5: | In a video store, a DVD that sells for $15 is marked, "10% off." What is the sale price of the DVD? | http://www.mathgoodies.com/lessons/percent/images/dvd2.gif |
| Solution: | The rate is 10%. Thus, the customer is paying 90% for the DVD. |
|  | The sale price is: 0.90 x $15.00 = $13.50 |
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| Answer: | The sale price is $13.50. |