**Percentage Problem Strategies**

**Key Vocabulary: Original Words and Phrases Future Words and Phrases** **Had the following (time like “year”)**

 **Were, was lowered to**

 **Currently increased by**

 **In the past in (some number) years**

 **During the past (some number) years from now**

 **(some number) years ago will**

 **from to**

 **of after (timeframe)**

**Types of Problems:**

1. **Increased or decreased percentages:**

**Difference = |Original – Future| = Increased/Decreased Percentage**

**Original Number Original Number 100%**

Examples:

A home price went from $450,000 to $300,000. What is the percent decrease in the value of the home?

$450,000 - $300,000 = \_x\_ $450,000x = $150,000(100%) x = $150,000(100%) x = 33.3%

 $450,000 100% $450,000

A hat is normally $30 and is on sale for 20% off. What is saved? (This is asking for the difference)

 \_X = 20% 100%x = 20%($30) x = 20%($30) x = $6

$30 100% 100%

1. **Percentage change added or subtracted to total:**

**New Price = 100%+(-Reduced%)**

 **Original Price 100%**

**New Price = 100%+(+Increased%)**

 **Original Price 100%**

Examples:

If a laptop is on sale at 15% off its original price of $750, how much will it cost?

New Price = 100%+(-15%) New Price(100%) = (85%)($750) New Price = (85%)($750)

 $750 100% 100%

 = $637.50

If you make $10.25 an hour and your boss gives you a 5% raise, what is your new hourly rate?

New Hourly Rate = 100% + 5% (New Hourly Rate)(100%) = (105%)($10.25/hour)

 $10.25/hour 100%

(New Hourly Rate) = (105%)($10.25/hour) New Hourly Rate = $10.76

 (100%)

1. **Numbers that are percentages of other numbers:**

**Some Number = Some Percentage**

 **Original Number 100%**

Examples:

What is 35% of 87? X = 35% 100%x = 87(35%) x = 87(35%) x = 30.45

 87 100% 100%

What percentage is 43 of 129? 43 = \_x\_ 129x = 43 (100%) x = 43(100%) x = 33.3%

 129 100% 129

53 is 18% of what number? 53 = 18% (18%)x = 53(100%) x = 53(100%) x = 294.44

 X 100% 18%

1. **Interest Problems:**

**1 Year’s Interest = Interest Rate%**

 **Original Amount 100%**

**(Original Amount)(Interest% a Year) = 1 Year’s Interest**

 **100%**

**(Original Amount)(Interest% a Year)(Some Years) = Interest Earned in Some**

 **100% Amount of Years**

Example:

If you deposit $350 into a bank that yields (gives) 6.5% annual (yearly) simple interest, how much interest will you earn in 7 years?

$350(6.5%/year)(7 years) = $159.25

 100%