Unit 7: Ratios and Proportions Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Pre-Algebra: Practice Test Hour:\_\_\_\_\_\_\_\_\_\_\_\_

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| **7.1: I can calculate the unit rate.** |
| 1. $\frac{18 chairs}{3 people}$ | 2. $\frac{70 miles}{5 hours}$ |
| 3.$\frac{\$161}{7 shares}$ | 4. $\frac{320 tourists}{5 boats}$ |
| **7.1: I can simplify complex fractions.** |
| **5.** $\frac{\frac{1}{2}}{\frac{5}{8}}$ | **6.** $\frac{1\frac{3}{5}}{\frac{1}{15}}$ |
| **7.** $\frac{\frac{5}{9}}{\frac{25}{27}}$ | **8.** $\frac{2\frac{1}{4}}{1\frac{3}{8}}$ |
|  | Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_% |

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| **7.2 I can find equivalent rates by conversion.** |
| 1. $\frac{300 miles}{20 seconds}=\frac{?miles}{1 minute}$ |
| 2. $\frac{45 minutes}{1 mile}= \frac{?hours}{1 miles}$ |
| 3. $\frac{440 cups}{1 mile}= \frac{?ounces}{1 yard} $ |
| 4. $\frac{8 calls}{1 hour}= \frac{?calls}{1 day}$ |
|  | Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_% |

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| **7.3 I can state whether the ratios for a proportion.** |
| 1. $\frac{9}{6}, \frac{156}{104}$ | **2.** $\frac{36}{48}, \frac{30}{30}$ |
| 3. $\frac{4}{20}, \frac{16}{40}$ | **4.** $\frac{16}{48}, \frac{18}{52}$ |
| **7.3 I can solve proportions using cross products.** |
| 5. $\frac{x}{14}=\frac{10}{4}$ | 6. $\frac{-4x+6}{4}=\frac{5}{2}$ |
| 7. $\frac{12}{x}=\frac{0.4}{9}$ | 8. $\frac{28}{x}= \frac{8}{16}$ |
|  | Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_% |

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| **7.4 I can use a table to find the constant of proportionality.** |
| 1. Each pound of green beans costs:

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| --- | --- | --- | --- | --- | --- |
| Pounds of Beans (x) | 3 | 5 | 7 | 9 | 11 |
| Cost (y) | $0.99 | $1.65 | $2.31 | $2.97 | $3.63 |

Equation: |
| 2. Each unicorn costs:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Unicorns (x) | 2 | 4 | 6 | 8 | 10 |
| Cost (y) | $450 | $900 | $1,350 | $1,800 | $2,250 |

Equation: |
| 3. Each candle costs:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Candles (x) | 1 | 4 | 8 | 12 | 16 |
| Cost (y) | $2 | $8 | $16 | $24 | $32 |

Equation: |
| 4. For every M&M in the bag, there are\_\_\_\_\_\_\_ green M&Ms:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| # of Green M&Ms (x) | 12 | 18 | 24 | 30 | 36 |
| Total # of M&Ms (y) | 48 | 72 | 96 | 120 | 144 |

Equation: |
| **7.4 I can use a table to determine if a relationship varies directly.** |
| State whether the table represents a proportional relationship. |
| 5.

|  |  |
| --- | --- |
| $$x(years)$$ | $$y(coins)$$ |
| 0 | 0 |
| 1 | 3 |
| 2 | 6 |
| 3 | 9 |
| 4 | 12 |

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|  |  |
| --- | --- |
| $$x(time)$$ | $$y(miles)$$ |
| 0 | 0 |
| 4 | 400 |
| 20 | 1,600 |
| 40 | 12,000 |
| 80 | 32,000 |

6. |
|  | Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_% |

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| **7.5 I can find the constant of proportionality and use it to write an equation.** |
| 1. $y=25;x=5$ | 2. $y=36;x=4$ |
| 3. $y=30;x=3$ | 4. $y=4;x=\frac{1}{4}$ |
| **7.5 I can tell whether x and y are related directly.** |
| 5. $y=\frac{1}{2}x$ | 6. $\frac{1}{3}y=x$ |
| 7. $x=\frac{y}{2} $ | 8. $y=x+1$ |
|  | Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_% |

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| **7.6 I can graph solutions to direct variation equations. Write the equation for each line.** |
| 1. http://www.algebra-class.com/images/blank-graph.gif$y=1;x=\frac{1}{3}$

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| --- | --- |
| $$x$$ | $$y$$ |
| **0** |  |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |

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| 1. http://www.algebra-class.com/images/blank-graph.gif$y=2;x=4$

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
|  |  |
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| 1. http://www.algebra-class.com/images/blank-graph.gif$y=1;x=1$

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
|  |  |
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Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_%

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| **7.7 I can write and solve a proportion and use direct variation to represent real-life problems.** |
| 1. 8 rolls of paper towel cost $14.08. How many rolls can you buy for $21.12 |
| Proportion: | Answer: |
| Constant of Proportionality (k): | Direct Variation Equation: |
| 2. Joseph drives 125 miles in 25 hours. At the same rate, how far will he be able to drive in 6 hours? |
| Proportion: | Answer: |
| Constant of Proportionality (k): | Direct Variation Equation: |
| 3. One hundred people attend a school fundraiser. The school earns $2500 from ticket sales. How much money will be raised from ticket sales if 500 people attend next year? |
| Proportion: | Answer: |
| Constant of Proportionality (k): | Direct Variation Equation: |
| 4. If recycling 2006 pounds of paper saves 17 trees, how many trees are saved when 5000 pounds of paper are recycled? |
| Proportion: | Answer: |
| Constant of Proportionality (k): | Direct Variation Equation: |
|  | Score:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_% |