Writing Equations and Inequalities from Word Problems

*For each word problem, clearly define your variable and set-up an equation/inequality. Solve.*

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| 1. Jordan plans to purchase one movie ticket for $8.50, and wants to purchase several boxes of candy for $3.25 each. Using an inequality, determine the greatest number of boxes of candy he can buy with $21.50. Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equ./Inequal: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Final Answers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 2. Wanda earns an hourly wage plus commission at her retail job. Last week, she worked 32 hours and earned a $65.85 bonus. If her total paycheck, including the bonus, was $352.25 how much does Wanda make each hour? Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Equ./Inequal: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Final Answers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 3. The price of a DVD player today is $56.60. This is eight dollars less then $\frac{2}{3}$ the price of the same DVD player in 2005. What was the cost of the DVD player in 2005? Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Equ./Inequal: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Final Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 4. As a sales person, Harvey earns $60 per day plus ¼ of his customer sales. If Harvey wants to earn a total of at least $147.50 in order to buy a new gaming system, how much must his customer sales be? Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Equ./Inequal: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Final Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 5. Which equation below could be used to solve the following problem? Karlie has a collection of quarters, dimes, and nickels that equal $2.70. If she has 7 quarters and 7 nickels, how many dimes does she have?A. .10d + 7(.25) + 7(.5) = 2.70B. .10d+ 7(.25 + .05) = 2.70C. 10d + 7(25 + 5) = 2.70D. .10d + 7(.25) + .05 = 2.70 | 6. Which equation below could be used to solve the following problem?The length of a rectangle is $3\frac{2}{5}$ inches longer than the rectangle’s width. If the perimeter of a rectangle is $9\frac{3}{10}$ inches, what is the width of the rectangle? A. $(3\frac{2}{5}$ + w) = $9\frac{3}{10}$B. 2$(3\frac{2}{5}$ + w) = $9\frac{3}{10}$C. $(3\frac{2}{5}$ + w) + w = $9\frac{3}{10}$D. 2$(3\frac{2}{5}$ + w) + 2w = $9\frac{3}{10}$ |

SOLUTIONS: Writing Equations and Inequalities from Word Problems

*For each word problem, clearly define your variable and set-up an equation/inequality. Solve.*

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| 1. Jordan plans to purchase one movie ticket for $8.50, and wants to purchase several boxes of candy for $3.25 each. Using an inequality, determine the greatest number of boxes of candy he can buy with $21.50. Variable: c= greatest number of boxes of candy Equ./Inequal: 8.50 + 3.25c ≤ 21.50Final Answers: c ≤ 4 | 2. Wanda earns an hourly wage plus commission at her retail job. Last week, she worked 32 hours and earned a $65.85 bonus. If her total paycheck, including the bonus, was $352.25 how much does Wanda make each hour? Variable: w = hourly wageEqu./Inequal: 32w + 65.85 = 352.25Final Answers: w = $8.95 |
| 3. The price of a DVD player today is $56.60. This is eight dollars less then $\frac{2}{3}$ the price of the same DVD player in 2005. What was the cost of the DVD player in 2005? Variable: c = cost of DVD player in 2005Equ./Inequal: $\frac{2}{3}$c – 8 = 56.60Final Answer: $96.90 | 4. As a sales person, Harvey earns $60 per day plus ¼ of his customer sales. If Harvey wants to earn a total of at least $147.50 in order to buy a new gaming system, how much must his customer sales be? Variable: c = customer salesEqu./Inequal: ¼c + 60 ≥ 147.50Final Answer: c ≥ $350 |
| 5. Which equation below could be used to solve the following problem? Karlie has a collection of quarters, dimes, and nickels that equal $2.70. If she has 7 quarters and 7 nickels, how many dimes(d) does she have?A. .10d + 7(.25) + 7(.5) = 2.70B. .10d+ 7(.25 + .05) = 2.70C. 10d + 7(25 + 5) = 2.70D. .10d + 7(.25) + .05 = 2.70**The answer is B.**  | 6. Which equation below could be used to solve the following problem?The length of a rectangle is $3\frac{2}{5}$ inches longer than the rectangle’s width. If the perimeter of a rectangle is $9\frac{3}{10}$ inches, what is the width of the rectangle? A. $(3\frac{2}{5}$ + w) = $9\frac{3}{10}$B. 2$(3\frac{2}{5}$ + w) = $9\frac{3}{10}$C. $(3\frac{2}{5}$ + w) + w = $9\frac{3}{10}$D. 2$(3\frac{2}{5}$ + w) + 2w = $9\frac{3}{10}$**The answer is D.**  |