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 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) = 2.70  B. .10d+ 7(.25 + .05) = 2.70  C. 10d + 7(25 + 5) = 2.70  D. .10d + 7(.25) + .05 = 2.70 | 6. Which equation below could be used to solve the following problem?  The length of a rectangle is inches longer than the rectangle’s width. If the perimeter of a rectangle is inches, what is the width of the rectangle?  A. + w) =  B. 2 + w) =  C. + w) + w =  D. 2 + w) + 2w = |

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 ≤ 21.50  Final 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 wage  Equ./Inequal: 32w + 65.85 = 352.25  Final Answers: w = $8.95 |
| 3. The price of a DVD player today is $56.60. This is eight dollars less then 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 2005  Equ./Inequal: c – 8 = 56.60  Final 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 sales  Equ./Inequal: ¼c + 60 ≥ 147.50  Final 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) = 2.70  B. .10d+ 7(.25 + .05) = 2.70  C. 10d + 7(25 + 5) = 2.70  D. .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 inches longer than the rectangle’s width. If the perimeter of a rectangle is inches, what is the width of the rectangle?  A. + w) =  B. 2 + w) =  C. + w) + w =  D. 2 + w) + 2w =  **The answer is D.** |