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| **EXPRESSIONS AND EQUATIONS**  **STUDY GUIDE, Page 1** |

1. **Emily studies 40 minutes after lunch for a science exam. She studies *x* more minutes that evening.**

**Enter an equation that represents the total number of minutes, *y*, Emily studies for the science exam.**

1. **Jack saves $6.00 each week. He started saving beginning with week 1.**

* **Let *w* represent the number of weeks Jack saves**
* **Let *t* represent the total amount saved, in dollars.**

**Graph the amount of money Jack saves over 4 weeks.**

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1. **Select all expressions that are equivalent to**

**3 + *w* + *w* + *w***

**a) 3(1 + w) c) 3 + w3**

**b) 3 + 3w d) 3w3**

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| **EXPRESSIONS AND EQUATIONS STUDY GUIDE, Page 2** |

1. **Jack saves the same amount of money each week as shown in the table.**

* **Let *w* represent the number of weeks that Jack saves**
* **Let *t* represent the total amount saved, in dollars**

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| **Number of Weeks**  **(w)** | **Total Amount Saved**  **(t)** |
| **1** | **$6.00** |
| **2** | **$12.00** |
| **3** | **$18.00** |
| **4** | **$24.00** |

**Determine whether each statement is true. Select true or false for each statement.**

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| **STATEMENT** | **TRUE** | **FALSE** |
| **The equation, *t = 6 + w,* represents the relationship between the number of weeks and the total amount saved.** |  |  |
| **The total amount saved is 6 times the number of weeks.** |  |  |
| **The number of weeks that Jack saves depends on the total amount of money that Jack saves** |  |  |
| **What is the rule for the RATIO TABLE above?** | | |

1. **Select all equations that have *x* = 3 as a solution.**

**a) *x* + 7 = 10 c) x  3 = 1**

**b) 3 + *x* = 3 d) 4  x = 12**

1. **Enter the value of 2  *y* – 8 ÷ 4, when *y* = 7.**

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| **EXPRESSIONS AND EQUATIONS STUDY GUIDE, Page 3** |

1. **Select all the inequalities that have the set {-4.86,**

**-2.5, 0, 2.74, 4.1} as possible solutions for *x*.**

1. ***x* > -4.24 c) *x* > -5.13**
2. ***x* < -5.5 d) *x* < 4.5**
3. **Select all the sets of numbers that are possible values for *x* in the inequality, *x* < 7½.**
4. **{ 0, 2⅞, 7⅗ } c) { 8⅞, 10½, 15⅔ }**
5. **{ -28, -4⅔, -1½ } d) { -4½, 3⅔, 6⅗ }**
6. **Hands-On Equations: 2X + 3X + E + E = X + 15 + E**

**“Find” the value of X and E, and “Check” your work:**

1. **Enter the value of 33  *y*2 – 8 ÷ 4, when *y* = 7**

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| **EXPRESSIONS AND EQUATIONS STUDY GUIDE, Page 4** |

1. **The formula, C = 5/9(F – 32), is used to convert degrees Fahrenheit (F) to degrees Celsius (C).**

**Enter the temperature, in degrees Celsius (C), equal to 113 degrees Fahrenheit (F).**

1. **Consider the expression 3(2x + 5y). Enter an expression that shows the sum of exactly two terms that is equivalent to 3(2x + 5y).**
2. **An equivalent expression to 6x + 15y can be written as the product of two factors. One of the factors is 3. Enter the second factor that will result in 6x + 15y when the two factors are multiplied.**
3. **Which of the following expressions are equivalent? Why? If an expression has no match, write 2 equivalent expressions to match it.**

**a) 2(x + 4) c) 8 + 2x**

**b) 2x + 4 d) 3 (x + 4) – (4 + x)**

**e) 8 + 8 - 8 + 5x - 3x f) x + 4**

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| **EXPRESSIONS AND EQUATIONS STUDY GUIDE, Page 5** |

1. **Which expressions are equivalent to 2(4f + 2g)?**

**a) 8f + 4g c) 8f + 2g**

**b) 2f(4 + 2g) d) 4(2f + g)**

1. **Consider this equation:**

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**4(3x + 2y) = +**

**Drag a term into each box to create an expression equivalent to 4(3x + 2y)**

1. **Consider the equation:**

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**3x + 2x + 15y = ( + )**

**Drag a term into each box to create an expression equivalent to 3x + 2x + 15y**

1. **Consider the equation:**

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**6x + = 3( + 5)**

**Drag a term into each box to create a true equation.**

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| **EXPRESSIONS AND EQUATIONS STUDY GUIDE, Page 6** |

1. **Select all expressions that are equivalent to**

**4(3x + 6y).**

**a) 12x + 6y c) 2(6x + 12y)**

**b) 12x + 24y d) 4(12x + 24y)**

1. **What is the difference between an expression and an equation?**

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1. **Enter a numerical expression that represents the sum of eight squared and thirty-two.**

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1. **Enter an algebraic expression that represents eight times the sum of *y* squared and twenty-eight.**

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1. **Select all the statements that correctly describe the expression, 42  (8w – 3).**
2. **The expression contains four terms**
3. **A term in the expression has a coefficient of 8**
4. **The expression shows the quotient of 8w – 3 and 42**
5. **The expression shows a product of 2 factors.**

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| **EXPRESSIONS AND EQUATIONS STUDY GUIDE, Page 7** |

1. **. Enter the value of *y* that makes the given equation true.**

**Y + 32/9 = 55/6**

1. **The sum of 32 and *n* is 59.13. Enter the equation described in this sentence.**

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**Find the value of n.**

1. **Julia has some peaches. She gathers 6 more peaches. She now has 58 peaches.**

**Part A: In the first box enter an equation that represents the total number of peaches, *p*, that Julia has after she gathers 6 more peaches.**

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**Part B: In the second box, enter the number of peaches represented by *p* in this situation.**

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