**Math 6** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Unit 3: Expressions** Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
**Sample Post Test**

**Knowledge and Understanding**

1. What do variables represent?

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1. How are exponents used?

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**Proficiency of Skills – Show all work and circle or box your answer.**

|  |  |
| --- | --- |
| 1. Simplify: | 1. Identify the coefficients of the expression below:   3x + y – 5 |
| 1. Evaluate  for *m* = 8. | 1. Apply the distributive property to write an equivalent expression to |
| 1. Simplify: |  |

**Application – Show all your work and circle or box your answer.**

1. The cost of renting a moving truck is $29.99 plus an additional $0.29 for each mile driven. Write an expression to represent the cost of renting the truck for *m* miles.
2. Write an expression that represents the area of the polygon shown below.

5

3

*x*

4

1. The formula  can be used to convert Fahrenheit temperatures to Celsius temperatures. Change  to Celsius.
2. Use the formula  to find the volume of a cube with a side length of  inch.
3. You want to find the product of 6 and 315 on your calculator but the “3” button on your calculator is broken. Explain how you could use your calculator to find this product.
4. The expression 100 + 5*n* can be used to find the total price for *n* students to take a field trip to the science museum. Determine the cost for 120 students to visit the science museum.
5. Mary works from 7:30 A.M. to 1:30 P.M. at one job and from 5:30 P.M. to 8:30 P.M. at another job. If she works *n* days per week, write an expression to represent the total number of hours Mary works at both jobs in one week.
6. Write the following statement as an expression: Five less than the product of 4 and *x*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A. |  | B. |  | C. |  | D. |  |

1. Danica and 3 friends order a large pizza for $9.99, an order of wings for $7.59, and *n* medium drinks for $0.99 each. If they split these costs evenly, which expression can be used to find the amount each girl should pay in dollars and cents, not including tax?

|  |  |  |  |
| --- | --- | --- | --- |
| A. |  | B. |  |
| C. |  | D. |  |

1. Helen bought *b* blouses that were originally priced at $24.50 each. Each blouse was on sale for $6.50 off the original price when she bought them. Which expression can be used to find the total sale price of *b* blouses?

|  |  |  |  |
| --- | --- | --- | --- |
| A. |  | B. |  |
| C. |  | D. |  |
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|  |  |  |  |

1. In the expression 5*x,* the 5 can be defined as a(n):

|  |  |  |  |
| --- | --- | --- | --- |
| A. | coefficient | B. | expression |
| C. | term | D. | variable |
|  |  |  |  |

1. The length of a rectangle is 4 times its width. If the width of the rectangle is *x*, which expression below represents the perimeter of the rectangle?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A. |  | B. |  | C. |  | D. |  |

**Performance Task**

1. The number of calories to consume per day to maintain your current weight is based on your weight, height, gender, and age. Let *h* represent the height in inches, *a* represent the age in years, and *w* represent the weight in pounds. The table below shows formulas that can be used to determine the number of calories needed to maintain a current weight.

|  |  |
| --- | --- |
| Men | Women |
|  |  |

**Part A:** Miranda is a 40-year old woman who is 5 feet 3 inches tall with a weight of 110 pounds. Determine the number of calories she should consume per day to maintain her weight. Write the expression and evaluate.

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**Part B:** James is a 23-year old man who is 6 feet 2 inches tall with a weight of 180 pounds. Determine the number of calories he should consume per day to maintain his weight. Write the expression and evaluate.

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**Part C:** Explain what would happen to James weight should he consume more or less than your calculation.

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**Math 6**   
**Unit 3: Expressions**   
**Sample Post Test Answer Key**

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| **Problem** | **Standard** | **Answer** |
| 1. | MGSE6.EE.2 | Answers may vary. Possible answer: Variables represent a quantity that changes or can have different values. |
| 2. | MGSE6.EE.1 | Answers may vary. Possible answer: Exponents are used to tell how many times a base is used as a factor. |
| 3. | MGSE6.EE.1 | 15 |
| 4. | MGSE6.EE.2b | 3 and 1 |
| 5. | MGSE6.EE.2c | 36 |
| 6. | MGSE6.EE.3 | 4*x* + 28 |
| 7. | MGSE6.EE.3 |  |
| 8. | MGSE6.EE.2a |  |
| 9. | MGSE6.EE.2a |  |
| 10. | MGSE6.EE.2c |  |
| 11. | MGSE6.EE.2c | in.3 |
| 12. | MGSE6.EE.3 | Answers may vary. Possible answer: 6(200) + 6 (115) |
| 13. | MGSE6.EE.2c | $700 |
| 14. | MGSE6.EE.2a | or |
| 15. | MGSE6.EE.2a | B |
| 16. | MGSE6.EE.2a | D |
| 17. | MGSE6.EE.2a | B |
| 18. | MGSE6.EE.2b | A |
| 19. | MGSE6.EE.2a | A |
| 20. | MGSE6.EE.2c | **Part A:** 1,241.6 calories  **Part B:** 1970.8 calories  **Part C:** James would gain weight if he consumed more than the calculated calorie intake. He would lose weight if he consumed less than the calculated calorie intake. |