**Math 8: Unit 13 Review**

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

\_\_\_\_ 1. Which graph represents the following system of equations?

*y* = *x* – 3

*y* = –3x + 3

|  |  |  |  |
| --- | --- | --- | --- |
| a. |  | c. |  |
| b. |  |  |  |

\_\_\_\_ 2. What is the solution of the system of equations?

*y* = –2*x* + 6

*y* = $\frac{5}{3}x$– 5

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| a. | [image](2, 5) | b. | (3 , 0) | c. | (-4 , –3)  | d. (0 , 3) |

**![[image]]()Graph each system on the graph paper provided below. Tell whether the system has *no solution*, *one solution*, or *infinitely many solutions*.**

\_\_\_\_ 3. *y* = 6*x* – 4

*y* = 6*x* – 5

|  |  |
| --- | --- |
| a. | no solutions |
| b. | one solution |
| c. | infinitely many solutions |

\_\_\_\_ 4. The length of a rectangle is 2 centimeters more than 3 times the width. If the perimeter of the rectangle is 36 centimeters, find the dimensions of the rectangle.

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| a. | length = 4 cm; width = 14 cm | c. | length = 12 cm; width = 3 cm |
| b. | length = 14 cm; width = 4 cm |
|  |  |
|  |  |

**Solve the system of equations using substitution.**

\_\_\_\_ 5. 6*x* – 2*y* = 6

*y* = 2*x* + 5

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| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | (8, 21) | b. |  | c. | (2 , –4)  | d. (–4, 2) |  |
|  |  |  |  |  |  |  |  |

\_\_\_\_ 6. The sum of two numbers is 82. Their difference is 24. Write a system of equations that describes this situation. Solve by elimination to find the two numbers.

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| --- | --- | --- | --- |
| a. | *x* – *y* = 82*x* + *y* = 2452 and 30 | c. | *x* + *y* = 82*x* – *y* = 2453 and 29 |
| b. | *x* + *y* = 24*y* – *x* = 8248 and 30 | d. | *x* + *y* = 24*x* – *y* = 2453 and 30 |

d

**Solve the system using elimination.**

\_\_\_\_ 7. 3*x* + 6*y* = –12

2*x* + 6*y* = –4

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| --- | --- | --- | --- | --- | --- | --- |
| a. | (10, –16) | b. | (2, –8) | c. | (–8, 2) | d. (16, –10) |

\_\_\_\_ 8. –2*x* – 2*y* = –8

*2x* + *y* = –1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| a. | (–5, 9) | b. | (1, 5) | c. | (–3, 1) | d. (9, –5) |

d.

**Short Answer**

*Show all work. Put your final answer in the box.*

*9.* The perimeter of a rectangle is 30 meters. The length is three more than 3 times the width. Find the dimensions of the rectangle.

*10.* As Sarah was shopping at the mall, she found that shirts and pants were the same price at Forever 21 and Charlotte Ruse. She bought two shirts and three pairs of pants and spent $66 at Forever 21. She also spent $96 at Charlotte Ruse of four shirts and three pairs of pants. How much does a shirt and pair of pants cost at the two stores?

11. Tris’s age plus four times Katniss’s age is 80. Three times Tris’s age plus four times Katniss’s age is 112. How old are Katniss and Tris?

**Short Answer Box**

9. Length \_\_\_\_\_\_ 10. Shirt \_\_\_\_\_ 11. Tris \_\_\_\_\_\_\_\_

 Width \_\_\_\_\_\_\_ Pants \_\_\_\_ Katniss \_\_\_\_\_\_\_