



# Regents Practice Test 3

## Integrated Algebra

### Part I: Multiple Choice

1. Which property is displayed in the following equation?

$$(xy)z = x(yz)$$

- [1] commutative property of multiplication
  - [2] distributive property
  - [3] associative property of multiplication
  - [4] multiplicative inverse property
2. A large pizza has a circumference of 72.5 inches. Which of the perimeters listed could belong to the smallest box capable of holding a large pizza?
- [1] 23    [2] 24    [3] 73    [4] 96

3. For what values is  $\frac{x+1}{x^2-5x-14}$  undefined?

- [1] {2, -7}
  - [2] {-2, 7}
  - [3] {2, 7}
  - [4] {-2, -7}
4. The ages of two brothers can be represented as consecutive even integers. If the younger brother's age is  $x + 3$ , which expression represents the age of the older brother.
- [1]  $x + 1$     [2]  $x + 4$     [3]  $x + 5$     [4]  $2x + 3$

5. Given the relation  $A = \{(5,2), (7,4), (9,10), (x, 5)\}$ . Which of the following values for  $x$  will make relation  $A$  a function?
- [1] 9    [2] 7    [3] 5    [4] 4

6. The expression  $2(3x^2)^3$  is equivalent to
- [1]  $54x^6$     [3]  $18x^6$   
[2]  $6x^6$     [4]  $6x^5$

7. If  $18x^2y + 12x^2y^2 - 6xy^2$  is divided by  $6xy$ , the quotient is
- [1]  $2x + 2xy - y$     [3]  $3x + 2y - 1$   
[2]  $3x + 2xy - y$     [4]  $3xy + 2x^2y - y^2$

8. The slope of a line parallel to the line whose equation is  $3y + 2x = 6$  is
- [1]  $-2/3$     [2]  $2/3$     [3]  $-3/2$     [4]  $3/2$

9. The heights of all the students in grade 9 are arranged from least to greatest. Which statistical measure separates the top half of this set of data from the bottom half?
- [1] mean    [2] mode    [3] median    [4] average

10. Which ordered pair is *not* a solution set of  $y > 5x - 1$ ?
- [1] (1,5)    [2] (1,6)    [3] (1,8)    [4] (2,5)

11. When solved graphically, which system of equations will have *exactly* one point of intersection?

[1]  $y = -x - 20$                       [3]  $y = 0.6x + 12$   
 $y = x + 17$                                $y = 0.6x - 19$

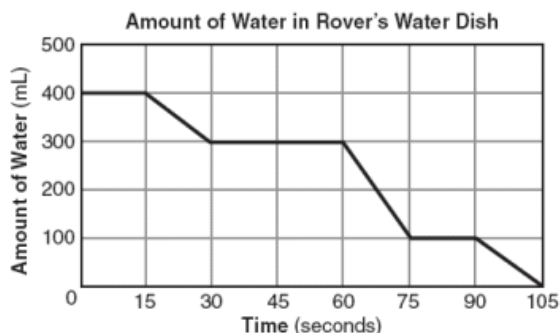
[2]  $y = 0.5x + 30$                       [4]  $y = -x + 15$   
 $y = 0.5x - 30$                                $y = -x + 25$

12. What is the sum of  $6\sqrt{7}$  and  $2\sqrt{63}$  ?

[1]  $3\sqrt{7}$     [2]  $12\sqrt{7}$     [3]  $36\sqrt{7}$     [4]  $8\sqrt{70}$

13. The accompanying graph shows the amount of water left in Rover's water dish over a period of time. How long did Rover wait from the end of his first drink to the start of his second drink of water?

[1] 10 sec    [2] 30 sec    [3] 60 sec    [4] 75 sec



14. The expression  $(3x^2 + 2xy + 7) - (6x^2 - 4xy + 3)$  is equivalent to

[1]  $-3x^2 - 2xy + 4$                       [3]  $-3x^2 + 6xy + 4$   
 [2]  $3x^2 - 2xy + 4$                       [4]  $3x^2 - 6xy - 4$

15. If  $x = -4$  and  $y = 3$ , what is the value of  $x - 3y^2$ ?

[1] -13    [2] -23    [3] -31    [4] -85

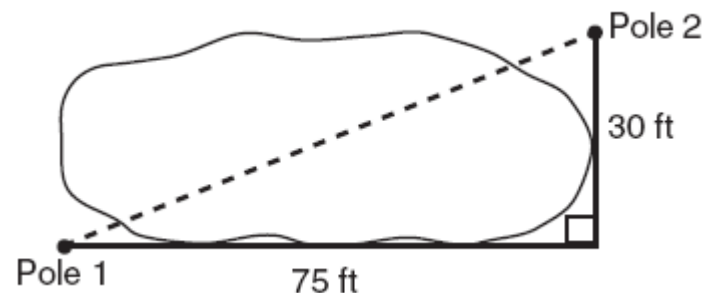
16. The formula for potential energy is  $P = mgh$ , where  $P$  is potential energy,  $m$  is mass,  $g$  is gravity, and  $h$  is height. Which expression can be used to represent  $g$ ?

[1]  $P - m - h$                               [3]  $\frac{P}{m} - h$

[2]  $P - mh$                                   [4]  $\frac{P}{mh}$

17. The NuFone Communications Company must run a telephone line between two poles at opposite ends of a lake, as shown in the accompanying diagram. The length and width of the lake are 75 feet and 30 feet, respectively. What is the distance between the two poles, to the *nearest foot*?

[1] 105    [2] 81    [3] 69    [4] 45



18. What is the solution set of the equation  $\frac{x}{5} + \frac{x}{2} = 14$  ?

[1] {4}    [2] {10}    [3] {20}    [4] {49}



**28.** Andy has grades of 84, 65, and 76 on three math tests. What grade must he obtain on the next test to have an average of exactly 80 for the four tests?

- [1] 90            [2] 95            [3] 85            [4] 80

**29.** The baby T-Rex at the museum weighs 851 pounds, to the *nearest pound*. Which weight listed **cannot** be the actual weight of the baby T-Rex?

- [1] 850.6 pounds  
[2] 851.0 pounds  
[3] 851.4 pounds  
[4] 851.6 pounds

**30.** What is the equation of the axis of symmetry of the graph

$$y = 3x^2 + 12x - 2 ?$$

- [1]  $x = -2$   
[2]  $x = 2$   
[3]  $y = -2$   
[4]  $y = 2$