

Name: Key Period: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_

fix  
#2, 19

Algebra B - 2<sup>nd</sup> Semester Exam Review 2015

1. Identify the y-intercept of  $y = 200\left(\frac{1}{2}\right)^x$ .  $(0, 200)$

2. You buy a souvenir ~~bobble head~~ <sup>coin</sup> for \$5.50. Each year the value of the coin increases by 1.5%. Write a function that models the value of the coin over time.

$$y = 5.50(1.015)^x$$

3. The function  $y = -2x^2 + 5$  represents:

- (a) linear growth      (b) a quadratic      (c) exponential growth      (d) exponential decay

4. Find the sum:  $(-3x^2 + 14) + (-x^2 + 6x + 8)$

$$-4x^2 + 6x + 22$$

5. If  $y^5 + 148y^4$  is a polynomial, classify it by its number of terms. binomial

6. Find the product:  $(-3x + 1)(2x + 7)$

$$-6x^2 - 19x + 7$$

7. Simplify the product:  $-w^2(3w^3 + 4w - 2) + w(-w^2 + 8w)$

$$-3w^5 - 5w^3 + 10w^2$$

8. Simplify the product:  $(4x - 3)^2$

$$16x^2 - 24x + 9$$

9. Solve the equation:  $-4c^3 + 12c^2 = 0$

$$-4c^2(c - 3) = 0$$

$$c = 0 \quad c = 3$$

10. Solve the equation:  $(x - 2)(4x + 3) = 0$

$$x = 2 \quad x = -\frac{3}{4}$$

11. Factor:  $n^2 - 5n - 6$

$$(n - 6)(n + 1)$$

12. Solve the equation:  $m^2 + 7m = 30$

$$m = -10 \quad m = 3$$

$$m^2 + 7m - 30 = 0$$

$$(m + 10)(m - 3) = 0$$

13. Factor the expression:  $3y^2 - 5y - 12$

$$(3y + 4)(y - 3)$$

Algebra 1: 2<sup>nd</sup> Semester Exam Review

14. Solve the equation:  $49n^2 - 81 = 0$

$$(7n-9)(7n+9) = 0$$

$$n = \pm \frac{9}{7}$$

15. Factor the polynomial  $6a^2b - 24b$  completely.

$$6b(a^2 - 4)$$

$$6b(a-2)(a+2)$$

16. Identify the vertex of  $y = 2x^2 + 1$ .

$$(0, 1)$$

17. Identify the vertex of  $y = -x^2 + 14x + 1$ .

$$(7, 50)$$

18. Looking at  $6v^2 - 7v + 2$  graphically, it has 2 solution(s).

19. Analyze the quadratic function  $y = x^2 + x + 1$ .  $y = 2x^2$

(a) opens up; stretch    (b) opens up; shrink    (c) opens up; normal    (d) opens down; stretch

20. Solve the equation:  $-2(x+3)^2 = -18$

$$(x+3)^2 = 9$$

$$x+3 = \pm 3$$

$$x = 0$$

$$x = -6$$

21. Find the value of  $c$  that makes the quadratic a perfect square:  $x^2 - 18x + c$   $c = 81$

22. If you complete the square to solve  $4x^2 - 16x - 1 = 0$ , you will get:

$$x = 4.06, -0.06$$

23. Write  $y = x^2 + 6x + 8$  in vertex form.

$$y = (x+3)^2 - 1$$

24. Use the quadratic formula to solve:  $-5x^2 + 7x - 2 = 0$

$$x = 1, 0.4$$

25. Use the quadratic formula to solve:  $8x^2 + 16x + 8 = 0$

$$x = -1$$