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Student Name: _____ Class: _____

Revision Worksheet

Grade 10 Advanced Mathematics (2019-2020)

Chapter 2– Quadratic Functions and Relations

Instructions: Read all questions carefully. Answer all questions.

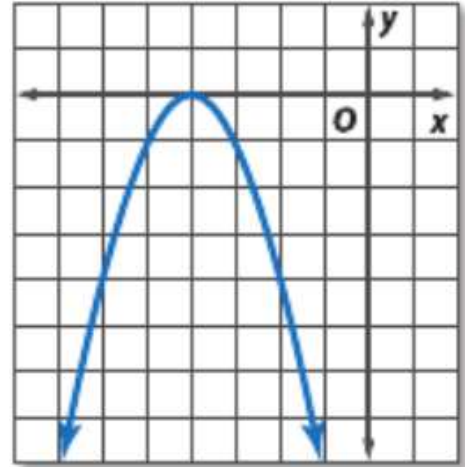
Lesson 2-1

- For the quadratic equation $f(x) = 4x^2 - 6x - 3$
 - Find the y-intercept, the equation of axis of symmetry and the x-coordinate of the vertex.
 - Make a table of values that includes the vertex
 - Use this information to graph the function.

- Determine whether the function $f(x) = x^2 + 3x - 12$ has a *maximum* or *minimum* value and find that value. State the domain and range of the function.

Lesson 2-2

3. Use the graph of the equation $-x^2 - 8x - 16 = 0$ to determine its solution



4. Solve the equation $x^2 - 3x - 18 = 0$. If exact roots cannot be found, state the consecutive integers between which the roots are located.

5. Use a quadratic equation to find two real numbers with a sum of 2 and a product of -24 .

Lesson 2-3

6. Write a quadratic equation in standard form with the roots $\frac{3}{2}$ and $\frac{1}{4}$.

7. Factor the polynomial $2x^2 + 7x - 30$

8. Solve the equation $2x^2 - 24x = -72$

Lesson 2-4

9. Simplify

(A) $\sqrt{-32}$

(B) $(4i)(-3i)$

(C) i^{63}

(D) $\frac{3-i}{4+2i}$

10. Solve the equation: $4x^2 + 32 = 0$

11. Find the value of a and b that make the equation true.

$$4b - 5 + (-a - 3)i = 7 - 8i$$

Lesson 2-5

12. Solve $9x^2 + 30x + 25 = 11$, by using the square root property.

13. Find the value of c that makes the trinomial $x^2 - 10x + c$, a perfect square. Then write the trinomial as a perfect square.

14. Solve the equation $x^2 + 8x + 10 = 0$, by completing the square.

Lesson 2-6

15. Solve each equation by using the quadratic formula

(A) $x^2 + 12x = 9 = 0$

(B) $10x^2 - 3 = 13x$

16. For the quadratic equation: $-16x^2 + 8x - 1 = 0$

(A) Find the value of the discriminant

(B) Describe the number and types of roots.

Lesson 2-7

17. Write the following function in vertex form

(A) $y = x^2 + 6x + 2$

(B) $y = 4x^2 + 24x + 24$

18. Graph the function $y = (x - 3)^2 - 4$

Lesson 2-8

19. Solve each inequality by graphing and verify by solving algebraically.

(A) $x^2 + 6x + 3 > 0$

(B) $0 \leq -4x^2 + 8x + 5$

(C) $-2x^2 + 3x + 3 \leq 0$

(D) $3x^2 + x \geq -3$