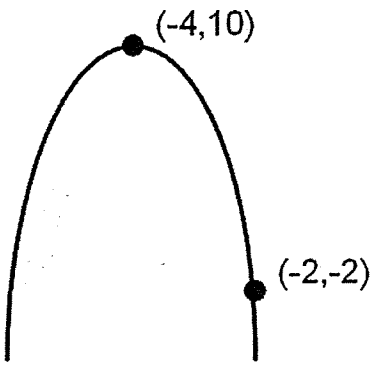
Alg 2A Final Exam Review Spring 2017

Chapter 5

1. Write the equation of this parabola in Vertex Form: $y = a(x-h)^2 + k$



Problems 2 and 3: For each quadratic answer the following:

a) State the equation for the line of symmetry
b) State the coordinates of the vertex
c) State the y-intercept
d) Tell if the parabola has a maximum or a minimum.

2. $y = -2x^2 - 16x + 13$ 3. $y = 3(x-1)^2 + 6$

4. Find ALL EXACT Complex solutions, both real and imaginary, using FACTORING:

a) $6x^2 - 15x = 0$ b) $2x^2 + 6x - 20 = 0$ c) $2x^2 + x - 10 = 0$ d) $2x^3 + 7x^2 - 18x - 63 = 0$

5. Find ALL EXACT Complex solutions, both real and imaginary, using SQUARE ROOTS:

a) $5 + 3x^2 + 57 = 8$ b) $(x+3)^2 + 24 = 8$

6. Find all Complex solutions, both real and imaginary, using the QUADRATIC FORMULA. Give all real solutions rounded to the nearest hundredth and simplify all imaginary solutions.

a) $4x^2 + 20x - 1 = 0$ b) $x^2 - 4x + 29 = 0$

On the final exam you will be given a group of quadratic equations to solve using any method you wish but you'll be required to use each method a given number of times.

7. An object is shot into the air from the top of a 30 foot building. The following equation models the height of the object as a function of time. $h(t) = -16t^2 + 200t + 30$

a) Find the time to reach it's maximum height.
b) Find the maximum height.
c) Find the time it takes for the object to return to the ground.
d) Find the time it takes for the object to reach a height of 100 feet.

8. A company wants to minimize their costs. The following equation models the company's costs, $C(p)$, as a function of the number of parts produced each day: $C(p) = 0.75p^2 - 120p + 8500$

a) Find the number of parts they should produce each day in order to minimize their costs.
b) Find the minimum costs.

9. Find each product: a) $(2 + 4i)(5 - 3i)$ b) $(6 + 7i)(6 - 7i)$

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Chapter 5

1. $y = -3(x+4)^2 + 10$

2. a) LOS: $x = -4$ b) Vertex $(-4, 45)$ c) $y - int = 13$ d) Max

3. a) LOS: $x = 1$ b) Vertex $(1, 6)$ c) $y - int = 9$ d) Min

4. a) $x = \frac{5}{2}, 0$ b) $x = 2, -5$ c) $x = 2, -\frac{5}{2}$ d) $x = \pm 3, -\frac{7}{2}$

5. a) $x = \pm 3i\sqrt{2}$ b) $x = -3 \pm 4i$

6. a) $x = -5.05, 0.05$ b) $x = 2 \pm 5i$

7. a) 6.25 sec b) 655 ft c) 12.65 sec d) 0.36 and 12.14 sec

8. a) 80 parts per day b) Minimum costs are 3700

9. a) $22 + 14i$ b) 85