Week 2-Quadratic Functions and Equations Review

(Question from Theory and Problems for Pre-Calculus Mathematics 11, Section 5.6 and 6.6)

Graph, and state the vertex, axis of symmetry, x-intercept(s), y-intercept, domain, range, and maximum or minimum value.





Find the vertex, x-intercept(s), and y-intercepts for each quadratic function.

1. If (4,0) is on , what is the least value of the function?
2. If (-3, 0) is on , what is the greatest value of the function?
3. Find the rectangle of maximum area that can be constructed with a perimeter of 44 cm.
4. A bus touring company charges $10 per passenger, and carries an average of 300 passengers per day. The company estimates it will lose 15 passengers for each increase of $1 in fare. What is the most profitable fare to charge?

Solving Quadratic Equations

1. How many solutions will f(x) have if ?
2. If has two real solutions, then what is k?
3. Vancouver and Kamloops are 300 km apart. Jerry travels 20km/h faster than Carol. Find Jerry’s average speed if it takes him 1.25 hours less time to travel from Vancouver to Kamloops than Carol.
4. Two pipes together can fill a tank in 2 hours. One of the pipes used alone takes 3 hours longer than the other to fill the tank. How long does it take the slower pipe to fill the tank alone?

Advanced questions

1. If has one real solution, then what is k?
2. Solve for x:
3. Solve for x:
4. Solve for x:
5. How many solutions do have?
6. (Euclid, 2013) In the diagram, V is the vertex of the parabola with equation . Also, A and B are the points of intersection of the parabola and the line with equation . Determine the value of .

