MATH3 (814013) – SPRING 2007

WORKSHEET 17

Question (1) : Solve the following equations by factoring:

1) $2x^2 + 6x + 4 = 0$
2) $9x^2 + 25 = -30x$
3) $9x^2 = 4x$
4) $4x^2 - 5 = 4$
5) $x^3 - 5x^2 + 4x = 0$

Question (2) : Solve the following equations by square root property:

1) $(y+2)^2 = 9$
2) $\left(x + \frac{1}{2}\right)^2 = \frac{3}{4}$
3) $4x^2 - 5 = 4$
4) $3x^2 + 12 = 0$

Question (3) : Solve the following equations by completing the square:

1) $x^2 - 4x = 5$
2) $6x - 9 = x^2$
3) $x^2 - \frac{5}{2} = -3x$
4) $y^2 + 4y - 3 = 0$
5) $2r^2 + 10r + 11 = 0$

Question (4) : Solve the following equations by quadratic formula:

1) $x^2 - 4x = 5$
2) $3x^2 + 12 = 0$
3) $(y+2)^2 = 9$
4) $x^2 + 6x + 9 = 0$
5) $2x^2 + 3x - 2 = 0$

Question (5) : Determine the number of solutions (roots) for each of the following equations.

1) $x^2 - 3x = 4$
2) $x^2 - 6x + 9 = 0$
3) $x^2 + x + 4 = 0$

Question (6) : The perimeter of a rectangle is 20 inches and its area 24 square inches. Find the lengths of its sides.

Question (7) : Find two numbers whose sum is 15 and the sum of whose squares is 137.

Question (8) : Find two consecutive odd integers whose product is 143.

Question (9) : Find two consecutive integers whose product is 132.

Question (10) : Find two consecutive even integers the sum of whose squares is 100.

Question (11) : The perimeter of a rectangle is 24 cm and its area is 32 square cm. Find the lengths of its sides.

Question (12) : A box with square base and no top is to be made from a square piece of metal by cutting 2 inch squares from each corner and folding up the sides. Find the dimensions of the metal sheet if the volume of the box is to be 50 cubic inches.

Question (13) : The length of the hypotenuse of a right triangle is $\sqrt{61}$ cm. Find the other two sides of the triangle sum is 11 cm.

Question (14) : Find two numbers such that their sum is 8 and their product is 15.