**Problem 2. x2 + 6x +8 = 0** (Dugopolski, p. 635, 2012).

Through observation, we can see that the quadratic equation in our problem is factorable. Solution by the factoring method:

x2 +6x + 8 = 0 Original equation

(x + 2)(x+4) = 0 **Factoring** left hand side.

x + 2 = 0 or x + 4 = 0 Zero Factor property will find the value of x.

 – 2 = – 2 or –4 = –4 Subtract variable

x = – 2 or x = – 4 Final answer

{–2, –4} Solution set braced by above answers.

On the above problem, how would I check the answers?

The factoring method is straightforward as long as the quadratic equation being solved is factorable.

Problem 78. **5w2 – 3 = 0** (Dugopolski, p. 637, 2012).

Though the problem is quite short for a quadratic equation, nevertheless, it is still a quadratic equation. Using the standard form of quadratic equation **ax2 +bx + c = 0,** the equation 5w2 – 3 = 0 can be represented as 5w2 +0x – 3 = 0, we know that a = 5; b = 0 and c = – 3.

Solution using the **Quadratic formula**:

x = – b ± sqrt(√b2 – 4ac)/2a **Discriminant** in this problem is “sqrt(√b2– 4ac).”

We may now proceed by plugging in the values above to the quadratic formula replacing the variable x with w.

w = –0 ± sqrt(√02 – 4(5)(-3)/2(5) Simplify

w = ± sqrt(√60)/10 Final result in radical form

w = sqrt(√2.2.15)/10 Factor the square root

w = 2√15/10

 w = ~~2~~√15/~~10~~ Simplify common factors

w = √15/5 Final answer

Reference:

Dugopolski, M. (2012). *Elementary and intermediate algebra* (4th ed.). New York, NY: McGraw-Hill Publishing.

Problem 78 has caused me some difficulty, after I dropped the ± symbol. Being told that there are other solutions. Can you show them to me? Unsure on the process.

w =  ± sqrt(√60)/10                                             Final result in radical form

w = 2√15/10

 w = ~~2~~√15/~~10~~                                                           Simplify common factors

w = √15/5                 Professor is stating there are two solutions? Final answer"

Also, how do I get the decimal equivalent for problem 78?

When it comes to solving quadratic equations, will completing the square always work?

Will using the quadratic formula always work? Can you explain using both of my problems?