Task #1:

Victoria is having trouble factoring special-case polynomials. Point out the errors she has made correct the mistakes.

1. 4a2-100

=(2a-10)(2a-10)

=(2a-10)2

1. 81m4 + 72m2n+ 16n2

=(9m2+8n)(9m2+8n)

=(9m2+8n)2

1. a10b4 – 16

=(a5b2-16)

=(a5b2-4)(a2b2+4)

1. 4d2+36d+81

=(2d+9)(2d-9)

Task #2:

A box with an open top is to be constructed by cutting 3-inch squares from the corners of a rectangular sheet of tin whose length is twice its width. What size sheet will produce a box having a volume of 60 in3? Illustrate.

Task #3:

Solve the quadratic equation 4x2 + x – 14 = 0 by:

1. Factoring
2. Graphing
3. Quadratic Formula
4. Completing the Square

Task #4:

A baseball is thrown straight upward from 4 feet above the ground with an initial speed of 30 ft/sec. When will the ball hit the ground? Illustrate.

Task #5:

An airplane flew with the wind for 30 minutes and returned the same distance in 45 minutes. If the cruising speed of the airplane was 320 mi/hr, what was the speed of the wind?

Task #6: Find the value of the discriminant and the number of solutions. Verify your results by solving each quadratic equation using either the quadratic formula or completing the square.

1. 2y2 + 7y = -3 b. p2 – 8p + 16 = 0 c. 3x2 = 2x - 5