Algebra/Trigonometry   Section 1.5   Name:_____

Please do all your work on a separate piece of paper. Please show all setup and work!

Word problem

1.   The price of a swimming pool has been discounted 16.5%. The sale price is $1210.75. Find the original list price of the pool.

2.   You are driving on a Canadian freeway to a town that is 300 kilometers from your home. After 30 minutes you pass a freeway exit that you know is 50 kilometers from your home. Assuming that you continue at the same constant speed, how long will it take for the entire trip?

3.   To obtain the height of a tree you measure the tree's shadow and find that it is 8 meters long. You also measure the shadow of a 2-meter lamppost and find that it is 75 centimeters long. How tall is the tree?

Solve the quadratic equation.

4. $x^2 - 2x + 2 = 0$

5. $4x^2 + 16x + 15 = 0$

Write the complex number in standard form.

6. $4 + \sqrt{-9}$

7. $-4i^2 + 2i$

Perform the operation and write the result in standard form.

8. $(5 + i) + (6 - 2i)$

9. $\left(8 + \sqrt{-18}\right) - \left(4 + 3\sqrt{2}i\right)$

10. $6i(5 - 2i)$

11. $(4 + 5i)^2$

Write the conjugate of the complex number. Then multiply the number and its conjugate.

12. $6 + 3i$

Perform the operation and write the result in standard form.

13. $\frac{2}{4-5i}$

Simplify the complex number and write in standard form.

14. i^{40}

15. $-6i^3 + i^2$