8.2 Multiplying and Factoring Worksheet

Simplify each product.

1.) \((z + 5)2z\)  
2.) \(2p(p^2 - 6p + 1)\)  
3.) \(3a(-3a^2 + 2a - 7)\)  

4.) \(-4h(-h^3 - 8h^2 + 2h)\)

Find the GCF of the terms of each polynomial.

5.) \(16q + 32\)  
6.) \(32y - 24\)  
7.) \(5d^3 + 20d - 35\)

8.) \(7g^4 + 21g^3 - 14g^2\)  
9.) \(33w^7 + 55w^5 - 22w^3\)

Factor each polynomial.

10.) \(12j^3 + 28\)  
11.) \(12k^3 - 9k^2 + 6\)  
12.) \(32z^4 - 80z^3 + 112z^2\)

13.) You are painting a rectangular wall with length \(5x^2\) ft and width \(12x\) ft. There is a rectangular door that measures \(x\) ft by \(2x\) that will not be painted. What is the area of the wall that is to be painted? Write your answer in factored form.

Simplify. Write in standard form.

14.) \(-5t^2(-6t^3 + 12t)\)  
15.) \(-2v(3v^3 - 6v^2 + 2v)\)  
16.) \(-2b^2(-4b^2 + 3b)\)