



SM 2

Name: \_\_\_\_\_ Period: \_\_\_\_\_

## SM2 5.2 HW Greatest Common Factors and Factoring by Grouping

**Factor out the greatest common factor. If the leading coefficient is negative, factor out a negative.**

1.  $27y^3 + 9y^2 - 15$

2.  $42n^7 - 35n^8 + 21n^9 - 49n^{11}$

3.  $m^2 + 5m$

4.  $7x^2 - 14x$

5.  $9k^3 - 3k$

6.  $28n^9 + 20n^3$

7.  $-18u^4 + 12$

8.  $-4t^3v - 10t^2v^5$

9.  $8r^3 - 36r^2 + 4r$

10.  $-24q^2 - 12q + 42$

11.  $2y^3z - 8y^2z + 5yz^2 + 10yz^3$

**Factor each polynomial by grouping. Don't forget to factor out the GCF first, if necessary.**

12.  $2h^3 - 5h^2 + 8h - 20$

13.  $g^3 - 3g^2 - 5g + 15$

14.  $25x^3 + 40x^2 + 30x + 48$

15.  $28a^3 + 7a^2 - 16a - 4$

16.  $24p^3 - 64p^2 - 3p + 8$

17.  $12p^3 + 16p^2 - 30p - 40$

18.  $21 - 7q + 3r - qr$

19.  $2xy + 12x + 3y^2 + 18y$

20.  $6xy - 24x - 7ny + 28n$

21. In your own words, explain what it means to factor a polynomial.

**Bonuses:**

**Factor each polynomial by grouping. Don't forget to factor out the GCF first, if necessary.**

22.  $-4b^2c + 16bc - 12b^2 + 48b$

23.  $150mnp - 25mn - 210np + 35n$