

## 8.1 - 8.2 GCF, Factoring, Factor by Grouping

**Find the GCF of the terms provided.**

1) a. 45, 27

b. 42, 21

c. 14, 29

d. 28, 49

2) a.  $14x^2$ ,  $24x^3$

b.  $21x^6$ ,  $35x^5$

c.  $42y^2$ ,  $30y^5$

d.  $22y^9$ ,  $44y^2$

3) a.  $2xy^2$ ,  $29x^2y$

b.  $49x^5y^3$ ,  $49x^3y^5$

c.  $9x^2yz$ ,  $81x^2y^2$

d.  $10x^3y$ ,  $15x^5y^3z^4$

4) a.  $12x^3y^4$ ,  $20x^5y^2$ ,  $28x^3y^7$

b.  $7x^4y$ ,  $21x^5y^5$ ,  $35x^2y^7$

c.  $16x^8y^{10}$ ,  $24x^5y^4$ ,  $28x^4y^8$

d.  $36x^4y^3$ ,  $20y^5z^8$ ,  $40x^3y^4z^5$

**Factor the common factor out of each expression.**

5)  $-60k^2 - 6$

6)  $6b + 12$

7)  $24 + 28v$

8)  $-9x^2y^3 + 54xy^3$

9)  $8ab - 32a$

10)  $6ba - 7b^2$

11)  $6a^2 + 36a - 6$

12)  $-21b^4 + 30b + 3$

13)  $72v^2 + 36v^2u + 63v^2u^4$

14)  $-4x^3y^3 + 32xy^2 + 20x^2$

**Factor each completely.**

15)  $15v^3 + 40v^2 - 24v - 64$

16)  $6a^3 - 8a^2 - 21a + 28$

17)  $42n^3 + 48n^2 + 7n + 8$

18)  $56v^3 - 21v^2 + 8v - 3$

19)  $21p^3 + 9p^2 + 14p + 6$

20)  $2n^3 + 4n^2 + n + 2$

**Find two numbers that you can multiply to get C and add to get B.**

21) 1. C = 21 B = 10

2. C = 45 B = 18

3. C = -20 B = 1

4. C = 15 B = 8

22) 1. C = -9 B = 8

2. C = 12 B = -7

3. C = 18 B = -9

4. C = 5 B = -6

23) 1. C = 32 B = 18

2. C = 32 B = -33

3. C = -32 B = 4

4. C = -32 B = 14

24) 1. C = -7 B = 6

2. C = -24 B = 2

3. C = -27 B = -6

4. C = 10 B = 11