

**Numbers, Relations & Functions 10**  
**Chapter 3: Factoring Test Review**

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

1. Write the prime factorization of 2800. (*Must use the Factor tree*)
2. Find the GCF and LCM of each of the following  
a) 45, 60                      b) 18, 24                      c) 180, 150
3. Factor the trinomial.       $-48x^4y^7 + 24x^3y^3 - 36x^2y$
4. Simplify the expression  $16y^2 + 11y + 8 + 5y^2 - 2y + 7$ , then factor.
5. Factor:  $k^2 - 16k + 28$
6. Complete the following  $(x \text{ \_\_\_\_})(x + 7) = x^2 + 5x - \text{\_\_\_\_}$
7. Find an integer to replace  $\square$  so that this trinomial is a perfect square.       $64x^2 - \square x + 25$   
*Hint:  $a^2 - 2ab + b^2 = (a - b)^2$*
8. State the product prime for each of the following (*Factor tree*)  
a) 4900                      b) 360
9. Simplify  $15x^5b^7 - 10x^3b^5 + 12x^3 - 7x^5b^7 + 30x^3b^5 + 8x^3$ , then factor. (SHOW ALL WORK)
- 10) Expand and simplify each of the following (Show work)  
a)  $(3x + 9)(4x - 8)$                       b)  $(3x + 4)(2x - 7) + (-2x + 4)(5x - 3)$

**11) Completely factor each of the following (Hint: may require more than one step)**

a)  $18x^5y^3 + 24x^7y^2 - 21x^5y^8 - 9x^2y^4$

b)  $9m^2 - 16$

c)  $n^2 - 7n - 18$

d)  $x^2 - 6x + 7$

e)  $k^2 + 14x - 32$

f)  $3x^2 - 8x + 4$

g)  $5x^2 - 17x - 12$

h)  $x^2 - 14x + 49$

i)  $2x^2 - 22x + 60$  (Factor completely)

j)  $25b^2 - 60b + 36$

k)  $12v^2 - 27$  (Factor completely)

L)  $15x^2y^2 - 60xy$