

Mid-Unit Review (Lcm, GCF, Factor, expand & Simplify)

Date \_\_\_\_\_

Find the GCF and the LCM of each.

1) 20, 40

GCF(20,40) =  $2 \times 2 \times 5 = 20$

LCM(20,40) =  $2 \times 2 \times 5 \times 1 \times 2 = 40$

2	20	40
2	10	20
5	5	10
	1	2

2) 8, 24

GCF(8,24) =  $2 \times 2 \times 2 = 8$

LCM(8,24) =  $2 \times 2 \times 2 \times 3 = 24$

2	24	8
2	12	4
2	6	2
	3	1

3) 18, 30

GCF(18,30) =  $2 \times 3 = 6$

LCM(18,30) =  $2 \times 3 \times 3 \times 5 = 90$

2	18	30
3	9	15
	3	5

4) 36, 24

GCF(36,24) =  $2 \times 2 \times 3 = 12$

LCM(36,24) =  $2 \times 2 \times 3 \times 3 \times 2 = 72$

2	36	24
2	18	12
3	9	6
	3	2

Factor each (Hint: GCF).

5)  $28x + 44xy - 8x^2y^2$

$4x(7 + 11y - 2x^2y^2)$

6)  $40x^2 - 30xy - 40$

$10(4x^2 - 3xy - 4)$

7)  $44x^2z^2 + 8a^2x^3z^2 + 20x^4z^3$

$4x^2z^2(11 + 2a^2x + 5x^3z)$

8)  $-24x^2 - 28x^2 + 48x^3$

$-52x^2 + 48x^3 = -4x^2(13 - 12x)$

$-52x^2 + 48x^3 = -4x^2(13 - 12x)$   
OR  
 $4x^2(-13 + 12x)$

9)  $35n^3m^2 + 35m^2 - 28m^2$

$7m^2(5n^2 + 5m - 28)$

10)  $15y^2k^3j^3 - 25y^2k^2j + 40k^5pj^4$

$5k^2j^3(3y^2kj^2 - 5y^2 + 8k^3pj)$

11)  $6y^2x^2 + 45x^3y + 33y^2x^2$

$39y^2x^2 + 45x^3y = 3x^2y(13y + 15x)$

12)  $5x^2 - 55x^3 + 45x^4$

$5x^2(1 - 11x + 9x^2)$

$$13) 20m^2 + 50m^4 + 30m^2$$

$$50m^4 + 50m^2$$

$$50m^2(m^2 + 1)$$

$$14) 15w^2vz - 40vz^2 + 20wv$$

$$5v(3w^2z - 8z^2 + 4w)$$

Find each product. (Expand and simplify)

$$15) 3(5x - 2)$$

$$15x - 6$$

$$16) 3a(5a - 1)$$

$$15a^2 - 3a$$

$$17) 3(3n - 4)$$

$$9n - 12$$

$$18) -5k(5k^2 + 5k - 3)$$

$$-25k^3 - 25k^2 + 15k$$

$$19) 5n^2(-4n^2 - 5n - 1)$$

$$-20n^4 - 25n^3 - 5n^2$$

$$20) -(6p^2 + p - 5)$$

$$-6p^2 - p + 5$$

$$21) (2b + 4)(-6b - 4)$$

$$-12b^2 - 8b - 24b + 16$$

$$-12b^2 - 32b + 16$$

$$22) (4n + 4)(8n - 7)$$

$$32n^2 - 28n + 32n - 28$$

$$32n^2 + 4n - 28$$

$$23) (5k + 8)(-3k - 1)$$

$$-15k^2 - 5k - 24k - 8$$

$$-15k^2 - 29k - 8$$

$$24) (-2n + 7)(-2n - 8)$$

$$4n^2 + 16n - 14n - 56$$

$$4n^2 + 2n - 56$$

$$25) (3v - 5)(3v^2 - 2v + 4)$$

$$9v^3 - 6v^2 + 12v - 15v^2 + 10v - 20$$

$$9v^3 - 21v^2 + 22v - 20$$

$$26) (v - 1)(8v^2 + 3v - 8)$$

$$8v^3 + 3v^2 - 8v - 8v^2 - 3v + 8$$

$$8v^3 - 5v^2 - 11v + 8$$