

Homework #1. Factoring Expressions With Common Factors

Date _____

Factor the common factor out of each expression.

1) $10n - 4$

2) $-3r + 6r^3$

3) $-2a^3 + 6$

4) $-12n^7 + 4n^4$

5) $8k^3 + 2k^5$

6) $6m^2 + 3$

7) $9r^2 - 12r^4$

8) $15x + 25$

9) $36x^3y - 9x^4 + 72x^5$

10) $40y^2x^2 + 80y^3x + 32y^4$

11) $-20b^3a^5 + 45b^3 + 25ba$

12) $100x + 30y - 90$

$$13) 6 + 14mn^2 + 12m$$

$$14) 70x^7 - 90x^4y + 90x^2y^2$$

$$15) 6u^6v^4 + 4u^3v - 4uv$$

$$16) 6u^2 - 12u^2v^2 + 12u^5v^3$$

$$17) 27p^2rq^5 - 15p^2r^3q^2 - 9p^3rq + 30p^3r^2$$

$$18) 4q^2r^7 + 16q^3r + 8q^5r + 18q^2p$$

$$19) 33a^2c^2b^2 + 6ac^3 + 18a^3c + 12ac$$

$$20) 8z^2y^3 - 32z^2y^2 + 88z^2xy + 40zx$$

$$21) 7h^2jk^4 - hj^2k^5 + 4hj^2k^4 + 9hj^4k^7$$

$$22) -33y^2xz - 22yz^3 + 33yx + 44y$$

$$23) 30x^9y^4z^6 + 50x^7y^2z^7 + 15x^5y^3z^6 - 40x^3y^2z^7$$

$$24) 5p^2qr^3 - p^5 + 5qr - r$$

$$25) 3x(x + 4) - 5(x + 4)$$

$$26) 4x^2(5x - 6y) + 3y^2(5x - 6y)$$

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Date _____

Factor the common factor out of each expression.

1) $10n - 4$

$2(5n - 2)$

2) $-3r + 6r^3$

$3r(-1 + 2r^2)$

3) $-2a^3 + 6$

$2(-a^3 + 3)$

4) $-12n^7 + 4n^4$

$4n^4(-3n^3 + 1)$

5) $8k^3 + 2k^5$

$2k^3(4 + k^2)$

6) $6m^2 + 3$

$3(2m^2 + 1)$

7) $9r^2 - 12r^4$

$3r^2(3 - 4r^2)$

8) $15x + 25$

$5(3x + 5)$

9) $36x^3y - 9x^4 + 72x^5$

$9x^3(4y - x + 8x^2)$

10) $40y^2x^2 + 80y^3x + 32y^4$

$8y^2(5x^2 + 10xy + 4y^2)$

11) $-20b^3a^5 + 45b^3 + 25ba$

$5b(-4a^5b^2 + 9b^2 + 5a)$

12) $100x + 30y - 90$

$10(10x + 3y - 9)$

$$13) 6 + 14mn^2 + 12m$$

$$2(3 + 7mn^2 + 6m)$$

$$14) 70x^7 - 90x^4y + 90x^2y^2$$

$$10x^2(7x^5 - 9x^2y + 9y^2)$$

$$15) 6u^6v^4 + 4u^3v - 4uv$$

$$2uv(3u^5v^3 + 2u^2 - 2)$$

$$16) 6u^2 - 12u^2v^2 + 12u^5v^3$$

$$6u^2(1 - 2v^2 + 2u^3v^3)$$

$$17) 27p^2rq^5 - 15p^2r^3q^2 - 9p^3rq + 30p^3r^2$$

$$3p^2r(9q^5 - 5q^2r^2 - 3pq + 10pr)$$

$$18) 4q^2r^7 + 16q^3r + 8q^5r + 18q^2p$$

$$2q^2(2r^7 + 8qr + 4q^3r + 9p)$$

$$19) 33a^2c^2b^2 + 6ac^3 + 18a^3c + 12ac$$

$$3ac(11ab^2c + 2c^2 + 6a^2 + 4)$$

$$20) 8z^2y^3 - 32z^2y^2 + 88z^2xy + 40zx$$

$$8z(y^3z - 4y^2z + 11xyz + 5x)$$

$$21) 7h^2jk^4 - hj^2k^5 + 4hj^2k^4 + 9hj^4k^7$$

$$hjk^4(7h - jk + 4j + 9j^3k^3)$$

$$22) -33y^2xz - 22yz^3 + 33yx + 44y$$

$$11y(-3xyz - 2z^3 + 3x + 4)$$

$$23) 30x^9y^4z^6 + 50x^7y^2z^7 + 15x^5y^3z^6 - 40x^3y^2z^7$$

$$5x^3y^2z^6(6x^6y^2 + 10x^4z + 3x^2y - 8z)$$

$$24) 5p^2qr^3 - p^5 + 5qr - r$$

$$5p^2qr^3 - p^5 + 5qr - r$$

$$25) 3x(x + 4) - 5(x + 4)$$

$$(x + 4)(3x - 5)$$

$$26) 4x^2(5x - 6y) + 3y^2(5x - 6y)$$

$$(5x - 6y)(4x^2 + 3y^2)$$