

Name

Period

Date

### Multiplying and Factoring.

$$1) \overbrace{2x'(x+8)} \\ \underline{2x^2 + 16x}$$

$$2) \overbrace{(n+7)5n'} \\ \underline{5n^2 + 35n}$$

$$3) \overbrace{6h'(7+h')} \\ \underline{42h + 6h^2} \\ \underline{6h^2 + 42h}$$

$$4) \overbrace{-b'(b-10)} \\ \underline{-b^2 + 10b}$$

$$5) \overbrace{-3c'(8+2c)} \\ \underline{-24c - 6c^2} \\ \underline{-6c^2 - 24c}$$

$$6) \overbrace{y'(2-3y+6)} \\ \underline{(2y) - 3y^2 + 6y} \\ \underline{-3y^2 + 8y}$$

$$7) \overbrace{4t'(6t+2)} \\ \underline{24t^2 + 8t}$$

$$8) \overbrace{-m'(4-8m+1)} \\ \underline{-4m + 8m^2 - m} \\ \underline{8m^2 - 5m}$$

$$9) \overbrace{7j'(-8j'-3)} \\ \underline{56j^2 - 21j}$$

$$10) \overbrace{-1t^2(4t-8)} \\ \underline{-4t^3 + 8t^2}$$

$$11) \overbrace{2k'(k-10)} \\ \underline{2k^2 - 20k}$$

$$12) \overbrace{8a'(-a'-7)} \\ \underline{-8a^2 - 56a}$$

$$13) \overbrace{4v'(2v+5)} \\ \underline{8v^2 + 20v}$$

$$14) \overbrace{5d(3d)} \\ \underline{15d^2}$$

$$15) \overbrace{11w(2w+6)} \\ \underline{22w^2 + 66w}$$

Factor.

16)

$$15x + 27$$

$$3(5x + 9)$$

17)  $2x^2 + 16x$

$$(2 \cdot x) \cdot x \quad (2 \cdot 8 \cdot x)$$

$$2x(x + 8)$$

18)  $5n^2 + 35n$

$$(5n \cdot n) \quad (5 \cdot 7 \cdot n)$$

$$5n(n + 7)$$

19)  $6w^3 - 14w$

$$(2 \cdot 3w^2) \cdot w \quad (2 \cdot 7w)$$

$$2w(3w^2 - 7)$$

20)  $72y^5 + 18y^2$

$$9 \cdot 8 \cdot (y^3 + y^3) \quad (9 \cdot 2 \cdot y^2)$$

$$9 \cdot 2 \cdot y^2$$

$$18y^2(4y^3 + 1)$$

$$21) 9m^3 + 30m - 24$$

$$\underline{(3) \cdot 3m^3 + (3) 10m - (3) 8}$$

$$3(3m^3 + 10m - 8)$$

GCF

$$22) 12x - 9$$

$$(3) \cdot 4x - (3) \cdot 3$$

$$3(4x - 3)$$

$$23) 18s^2 + 54$$

$$(18) \cdot s^2 + (18) \cdot 3$$

$$18(s^2 + 3)$$

$$24) -6c^2 + 12c$$

$$-(6)c^2 + (6) \cdot 2c$$

$$6c(-c + 2)$$

$$25) 4b^2 + 12b$$

$$(4)b^2 + (4) \cdot 3b$$

$$4b(b + 3)$$

$$26) x - x^2$$

$$(x) - (x) \cdot x$$

$$x(1 - x)$$

$$x - x^2$$

$$27) 9a - 63a^2$$

$$(9)a - (9) \cdot 7(a)a$$

$$9a(1 - 7a)$$

$$25) X - X^2$$

$$\textcircled{X} - \textcircled{X} \cdot X$$

$$\textcircled{X(1-X)}$$

$$26) 9a - 63a^2$$

$$9a - 9 \cdot 7a^2$$

$$\textcircled{9a(1-7a)}$$

27) write in standard form

$$\textcircled{-3X^1(4X^2 - 6X^1 + 12)}$$

$$\textcircled{-12X^3 + 6X^2 - 36X}$$

$$28) \textcircled{-7y^2(-4y^3 + 6y)}$$

$$\textcircled{28y^5 - 42y^3}$$

$$29) \textcircled{3X(X + 2X^2 + 1)}$$

$$3X^2 + 6X^3 + 3X$$

$$\textcircled{6X^3 + 3X^2 + 3X}$$