

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

## Expand: Algebraic Identities

Sheet 3

Expand each expression using algebraic identities.

1)  $(5m - 4n)(25m^2 + 20mn + 16n^2)$

2)  $\left(1 + \frac{3}{p}\right)^3$

3)  $(2a^2 + 5)^3$

5)  $\left(b + \frac{9}{c}\right)\left(b^2 - \frac{9b}{c} + \frac{81}{c^2}\right)$

7)  $(b + 5cd)^3$

9)  $(g - 8h)(g^2 + 8gh + 64h^2)$

10)  $(8 - uv)^3$

$^2 + 16)$

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$\cdot 49k^2)$

**Expand: Algebraic Identities**

Expand each expression using algebraic identities.

1)  $(5m - 4n)(25m^2 + 20mn + 16n^2)$

2)  $\left(1 + \frac{3}{p}\right)^3$

$125m^3 - 64n^3$

$\frac{27}{p^3} + \frac{27}{p^2} + \frac{9}{p} + 1$

3)  $(2a^2 + 5)^3$

$8a^6 + 60a^4 + 150a^2 + 125$

5)  $\left(b + \frac{9}{c}\right)\left(b^2 - \frac{9b}{c} + \frac{81}{c^2}\right)$

$b^3 + \frac{729}{c^3}$

7)  $(b + 5cd)^3$

$125c^3d^3 + 75bc^2d^2 + 15b^2cd + b^3$

9)  $(g - 8h)(g^2 + 8gh + 64h^2)$

$g^3 - 512h^3$

10)  $(8 - uv)^3$

$-u^3v^3 + 24u^2v^2 - 192uv + 512$

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$^2 + 16)$

$72x^2y + 432xy^2$

$\cdot 49k^2)$

$343k^3 + 8$