

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

## Expand: Algebraic Identities

Sheet 3

Expand each expression using algebraic identities.

1)  $\left(\frac{2}{x} - 3\right)^3$

2)  $(u^2 + v)^3$

3)  $(m - 5n)^3$

5)  $(2x + 7y)^3$

7)  $(t + 8)^3$

9)  $(7 - d^2)^3$

10)  $\left(\frac{a}{b} + 1\right)^3$

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**Expand: Algebraic Identities**

Expand each expression using algebraic identities.

1)  $\left(\frac{2}{x} - 3\right)^3$

$$\frac{8}{x^3} - \frac{36}{x^2} + \frac{54}{x} - 27$$

2)  $(u^2 + v)^3$

$$u^6 + 3u^4v + 3u^2v^2 + v^3$$

3)  $(m - 5n)^3$

$$m^3 - 15m^2n$$

5)  $(2x + 7y)^3$

$$8x^3 + 343y^3$$

7)  $(t + 8)^3$

$$t^3 + 24t^2 + 192t + 512$$

9)  $(7 - d^2)^3$

$$-d^6 + 21d^4 - 147d^2 + 343$$

10)  $\left(\frac{a}{b} + 1\right)^3$

$$\frac{a^3}{b^3} + \frac{3a^2}{b^2} + \frac{3a}{b} + 1$$

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$$- 48pq + 64$$

$$+ \frac{6}{k}$$

$$r^2 - 450w + 125$$