

Name : _____

Algebraic Identity

ES1

Expand each expression using algebraic identity.

1) $(x + y + 4)^2$

2) $(-a^2 - 9b + c^2)^2$

3) $(8p + q^3 - r^2)^2$

5) $\left(s^2 - \frac{2}{t} + 3\right)^2$

7) $(-b - 6c - d^4)^2$

9) $(7 + m - n)^2$

10) $\left(\frac{1}{r} - 4s + 6t\right)^2$

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Answer key

Algebraic Identity

ES1

Expand each expression using algebraic identity.

1) $(x + y + 4)^2$

$$x^2 + y^2 + 2xy + 8x + 8y + 16$$

2) $(-a^2 - 9b + c^2)^2$

$$a^4 + c^4 - 2a^2c^2 + 18a^2b - 18bc^2 + 81b^2$$

3) $(8p + q^3 - r^2)^2$

$$q^6 - 2q^3r^2 + r^4 + 16$$

$$- 2h^2 - 2gh + 1$$

5) $\left(s^2 - \frac{2}{t} + 3\right)^2$

$$s^4 + 6s^2 - \frac{4s^2}{t} + \frac{4}{t^2}$$

$$- 60z^3 - 20z^2 + 25$$

7) $(-b - 6c - d^4)^2$

$$d^8 + 2bd^4 + 12cd^4$$

$$r + 2vw + 2uw$$

9) $(7 + m - n)^2$

$$m^2 + n^2 - 2mn + 14m - 14n + 49$$

10) $\left(\frac{1}{r} - 4s + 6t\right)^2$

$$16s^2 + 36t^2 - 48st + \frac{1}{r^2} - \frac{8s}{r} + \frac{12t}{r}$$

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