

Name:

Squaring Binomials

Expand each of the following expressions using the formula,

$$(a + b)^2 = a^2 + 2ab + b^2$$

1 $\left(\frac{1}{4}x + \frac{2}{5}\right)^2$

2 $\left(2x + \frac{6}{7}\right)^2$

3 $(2mn + 5ab)^2$

4 $(2xy + 8x)^2$

5 $\left(z + \frac{7}{5}\right)^2$

6 $\left(\frac{1}{4} - 4a\right)^2$

7 $(11 - 4y)^2$

8 $(-9k + 2)^2$

9 $(-5n + 6)^2$

10 $(v + 5)^2$

11 $(7n + 4)^2$

12 $(8x^2 + 1)^2$

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Answers

$$(a + b)^2 = a^2 + 2ab + b^2$$

1 $\left(\frac{1}{4}x + \frac{2}{5}\right)^2$

$$\frac{1}{400}(25x^2 + 80x + 64)$$

3 $(2mn + 5ab)^2$

$$4m^2n^2 + 20abmn + 25a^2b^2$$

5 $\left(z + \frac{7}{5}\right)^2$

$$\frac{1}{25}(25z^2 + 70z + 49)$$

7 $(11 - 4y)^2$

$$121 - 88y + 16y^2$$

9 $(-5n + 6)^2$

$$25n^2 - 60n + 36$$

11 $(7n + 4)^2$

$$49n^2 + 56n + 16$$

2 $\left(2x + \frac{6}{7}\right)^2$

$$\frac{1}{49}(196x^2 + 168x + 36)$$

4 $(2xy + 8x)^2$

$$4x^2y^2 + 32x^2y + 64x^2$$

6 $\left(\frac{1}{4} - 4a\right)^2$

$$\frac{1}{16}(1 - 32a + 256a^2)$$

8 $(-9k + 2)^2$

$$81k^2 - 36k + 4$$

10 $(v + 5)^2$

$$v^2 + 10v + 25$$

12 $(8x^2 + 1)^2$

$$64x^4 + 16x^2 + 1$$