

Perfect Square Trinomials

Factor each completely.

1) $a^2 - 10a + 25$

$(a - 5)^2$

2) $9 - 12x + 4x^2$

$(3 - 2x)^2$

3) $25n^2 + 30n + 9$

$(5n + 3)^2$

4) $25a^2 + 40a + 16$

$(5a + 4)^2$

5) $4x^2 + 4x + 1$

$(2x + 1)^2$

6) $25a^2 - 30a + 9$

$(5a - 3)^2$

Find each product.

7) $(7r - 5)^2$

$49r^2 - 70r + 25$

8) $(5x - 4)^2$

$25x^2 - 40x + 16$

9) $(5x + 2)^2$

$25x^2 + 20x + 4$

10) $(3m - 6)^2$

$9m^2 - 36m + 36$

11) $(8x + 1)^2$

$64x^2 + 16x + 1$

12) $(7a + 4)^2$

$49a^2 + 56a + 16$

Find the value that completes the square and then rewrite as a perfect square.

13) $p^2 - 17p + \underline{\hspace{1cm}}$

$\frac{289}{4}; \left(p - \frac{17}{2}\right)^2$

14) $p^2 - 30p + \underline{\hspace{1cm}}$

$225; (p - 15)^2$

15) $x^2 + 34x + \underline{\hspace{1cm}}$

$289; (x + 17)^2$

16) $p^2 - 7p + \underline{\hspace{1cm}}$

$\frac{49}{4}; \left(p - \frac{7}{2}\right)^2$

17) $p^2 - \frac{34}{21}p + \underline{\hspace{1cm}}$

$\frac{289}{441}; \left(p - \frac{17}{21}\right)^2$

18) $x^2 - 19x + \underline{\hspace{1cm}}$

$\frac{361}{4}; \left(x - \frac{19}{2}\right)^2$