

Special Products

Factor each polynomial. (Difference of Two Squares)

1) $r^2 - 9 = 1r^2 - 9$

2) $v^2 - 1$

$$a^2x^2 - b^2 = (ax+b)(ax-b)$$

$$a^2 = 1 \quad b^2 = 9$$

$$\sqrt{a^2} = \sqrt{1} \quad \sqrt{b^2} = \sqrt{9}$$

$$a = 1$$

$$b = 3$$

$$(1x+3)(1x-3) \text{ or } (x+3)(x-3)$$

3) $1 - 4a^2$

4) $x^2 + 25$

5) $16r^2 - 9$

6) $25a^2 - 16b^2$

7) $4x^2 - y^2$

8) $m^2 - 9n^2$

9) $16x^2 - 9y^2$

10) $25u^2 + 16v^2$

Factor each polynomial. (Perfect Square Trinomials)

11) ^{Assume 1} $x^2 - 6x + 9$

$$a^2x^2 - 2abx + b^2 = (ax - b)^2$$

$$a^2 = 1 \quad 2ab = 6 \quad b^2 = 9$$

$$\sqrt{a^2} = \sqrt{1} \quad 2 \cdot 1 \cdot 3 = 6 \quad \sqrt{b^2} = \sqrt{9}$$

$$a = 1 \quad 6 = 6 \quad b = 3$$

$$(1x - 3)^2 \text{ or } (x - 3)^2$$

13) $p^2 + 10p + 25$

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

14) $x^2 + 2x + 1$

15) $25x^2 - 10x + 1$

16) $9p^2 - 24p + 16$

17) $9n^2 + 30n + 25$

18) $4x^2 + 20x + 25$

19) $16k^2 - 8k + 1$

20) $16v^2 + 8v + 1$