

Warm-up 3/31/17

Determine each product.

1. $(x + 3)(x + 3)$

$$x^2 + 3x + 3x + 9$$

$$x^2 + 6x + 9$$

2. $(x - 3)(x - 3)$

$$x^2 - 3x - 3x + 9$$

$$x^2 - 6x + 9$$

3. $(x + 3)(x - 3)$

$$x^2 - 3x + 3x - 9$$

$$x^2 - 9$$

4. $(x - 3)(x + 3)$

$$x^2 + 3x - 3x - 9$$

$$x^2 - 9$$

Pg. 992

1a

$$x^2 - 16$$

$$x^2 + 8x + 16$$

$$x^2 - 8x + 16$$

c

$$9x^2 - 1$$

$$9x^2 + 6x + 1$$

$$9x^2 - 6x + 1$$

Pg. 992

Difference of Squares

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

$$\begin{aligned}(x - 4)(x + 4) &= x^2 - 4^2 \\ &= x^2 - 16\end{aligned}$$

Perfect Square Trinomial

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

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

$$\begin{aligned}(x + 4)^2 &= x^2 + 2(x)(4) + 4^2 \\ &= x^2 + 8x + 16\end{aligned}$$

$$\begin{aligned}(3x - 1)^2 &= (3x)^2 + 2(3x)(1) + 1^2 \\ &= 9x^2 + 6x + 1\end{aligned}$$

Pg. 993

6

Pg. 994

8

$$x^2 + 10x + 25$$

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

$$(x+5)(x+5)$$

$$(x+5)^2$$

$$x^2 - 2(x)(3) + 12^2$$

$$(x-12)^2$$

$$16x^4 - 1$$

$$(4x^2)^2 - 1^2$$

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

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

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

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

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

$$(6x)^2 - 2(6x)(3) + 3^2$$

$$(6x-3)^2$$

$$9(4x^2 - 4x + 1)$$

$$9((2x)^2 - 2(2x)(1) + 1^2)$$

$$9(2x-1)^2$$

Pg. 994

9

$$x^2 - 12x + 36 = 0$$

$$x^2 - 2(x)(6) + 6^2$$

$$(x-6)^2 = 0$$

$$x-6=0$$

$$x=6$$

$$9x^2 - 25 = 0$$

$$(3x+5)(3x-5) = 0$$

$$3x+5=0 \quad 3x-5=0$$

$$3x = -5 \quad 3x = 5$$

$$x = -\frac{5}{3}$$

$$x = \frac{5}{3}$$

Pg. 995

1

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

$$x^3 - 2x^2 + 2x^2 - 4x + 4x - 8$$

$$x^3 - 8$$

$$x^3 - 2^3$$

Sum and Difference of Cubes

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

Pg. 998

9

10

$$(4x)^2$$

$$2x($$

Pg. 999

2a

$$2x^2 + 18$$

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

c

$$2(x^3 - 8)$$

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