

P-287 Factoring the Difference ^{4th/5} of Squares

$$2. \quad w^2 - 100$$

$$= (w + 10)(w - 10)$$

$$6. \quad x^4 - 36 \\ = (x^2 - 6)(x^2 + 6)$$

$$4. \quad 4a^2 - 121$$

$$= (2a - 11)(2a + 11)$$

10. Factor, if possible

$$m^2 - 49$$

$$= (m - 7)(m + 7)$$

11. $p^2 - 25$

$$= (p - 5)(p + 5)$$

$$y^2 + 24y + 144$$

15. $y^2 + 144$

$$= (y + 12)(y + 12)$$

$$= y^2 + 12y + 12y + 144$$

$$\begin{aligned} 17. \quad & 64 - x^2 \\ &= (8 - x)(8 + x) \end{aligned}$$

$$\begin{aligned} 19 \quad & s^2 - t^2 \\ &= (s - t)(s + t) \end{aligned}$$

$$\begin{aligned} 23. \quad & 4a^2 - 9b^2 \\ &= (2a - 3b)(2a + 3b) \end{aligned}$$

$$27. \quad 16 - x^2$$

$$= (4 - x)(4 + x)$$

$$32. \quad 144 - 121x^2$$

$$= (12 - 11x)(12 + 11x)$$

$$33 \quad 169 - 100t^2$$

$$= (13 - 10t)(13 + 10t)$$

35. Factor, if possible

$$\sqrt{6x^2 - 25}$$

-(NOT POSSIBLE)

$$39. x^2y^2 - 4$$

$$= (xy - 2)(xy + 2)$$

$$= x^2y^2 + 2xy - 2xy - 4$$

$$= x^2y^2 - 4$$

$$\begin{aligned}
 41. & (a+b)^2 - (a-b)^2 \\
 &= [(a+b) + (a-b)][(a+b) - (a-b)]
 \end{aligned}$$

$$\begin{aligned}
 43. & \frac{2m^2 - 50}{2} & 46. & \frac{8a^2 - 50}{2} \\
 &= 2(m^2 - 25) & &= 2(4a^2 - 25) \\
 &= 2(m+5)(m-5) & &= 2(2a-5)(2a+5)
 \end{aligned}$$

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Perfect Squares

$$1. (-7)^2 \\ = 49$$

$$-7^2 \\ = -49$$

$$7. (11y)^2 \\ = 121y^2$$

$$4. (-12)^2 \\ = 144$$

$$27. (y-10)^2$$

$$= (y-10)(y-10)$$

$$= y^2 - 10y - 10y + 100$$

$$= y^2 - 20y + 100$$

28.

$$(3a-1)^2$$

$$= (3a-1)(3a-1)$$

$$= 9a^2 - 3a - 3a + 1$$

$$= 9a^2 - 6a + 1$$

29. $(5x+2)^2$

$$= (5x+2)(5x+2)$$

$$= 25x^2 + 10x + 10x + 4$$

$$\begin{matrix} 25x^2 + \\ 20x + \\ 4 \end{matrix}$$

Homework

Section 8.6: # 1-58

Section 8.7: # 3-31