

10.7 Factoring Special Products

1. Factor.

a. $x^2 - 144$ $\sqrt{4} = 2$ $\sqrt{49} = 7$ $\sqrt{64} = 8$
 $\sqrt{144} = 12$ $\sqrt{9} = 3$
 $(x+12)(x-12)$ $(2x+7)(2x-7)$
 $(8x+3y)(8x-3y)$

2. Factor.

a. $x^2 + 18x + 81$ b. $x^2 - 8x + 16$ c. $8x^2 + 8x + 2$
 $\frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{2}$
 9 -4 $4x^2 + 4x + 1$
 $9^2 = 81$ $(-4)^2 = 16$ $2(4x^2 + 4x + 1)$
 $(x+9)^2$ $(x-4)^2$ $2(2x+1)^2$
 $2^2 = 4$

3. Factor and solve.

a. $3x^2 - 48 = 0$ b. $9x^2 - 24x + 16 = 0$
 $\frac{3}{3}$ $\frac{9}{3}$ $\frac{16}{4}$
 $3(x^2 - 16) = 0$ $\sqrt{9}$ $\sqrt{6}$ $\sqrt{3(4)(2)}$
 $\sqrt{16} = 4$ 3 4 24
 $3(x+4)(x-4) = 0$ $(3x-4)^2 = 0$
 $x = \pm 4$ $+4$ $+4$
 $3x = 4$
 $x = 4/3$