$16x^2 - 20x + 25$

$(4x - 5)(4x - 5)$

NF

$-20x$

$-20x$

$-40x$

p. 194 4, 8

4. d) $(7-f)^2 = (7-f)(7-f)$

$49 + f^2 - 14f$

$f^2 - 14f + 49$

$49 - 7f - 7f + f^2$

$49 - 14f + f^2$

8. c) $81 - 36v + 4v^2$

$4v^2 - 36v + 81$

$(2v - 9)(2v - 9)$ ✓

$-18v$

$-18v$

$+$

$-36v$

45) $(3-y)(3+y) = 9 + 3y - 3y - y^2$

$= 9 - y^2$

Look for patterns

$(3-y)(3+y) = 9 - y^2$

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

$(x-3)(x+3) = x^2 - 9$

Difference of perfect squares

$(2x+5)(2x-5) = 4x^2 - 25$

* notice the factors {two terms} are identical, with a sign change

Factor: $x^2 - 49$

$(x + 7)(x - 7)$

$\sqrt{x^2}$ $\sqrt{49}$

$5x^2 - 10y^2$

$5(x^2 - 2y^2)$

Factor:

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

$(ab + 4)(ab - 4)$

b) $25x^2 - 9y^2$

$(5x + 3y)(5x - 3y)$

c) $5x^2 - 20y^2$

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

$5(x - 2y)(x + 2y)$

Factoring Strategies

2 terms

- common Factor

$5x + 10$

$= 5(x + 2)$

- difference of squares.

$9x^2 - 16$

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

3 terms

- common Factor

$2xy + 4x^2y - 6y^3$

$= 2y(x + 2x^2 - 3y^2)$

- simple trinomials $ax^2 + bx + c$ $a = 1$

$x^2 + 5x + 6$ (multiply ↙) Factors of 'c' that add to 'b'

$(x + 2)(x + 3)$

con't . . .

3 terms con't

- complex trinomials

$ax^2 + bx + c \quad a \neq 1$

decomposition, box method, guess & check

$4x^2 + 20x + 9$ → 36: 2, 18

multiply 'a' & 'c'

look factors that add to 'b'

$4x^2 + 2x + 18x + 9$

$2x(2x+1) + 9(2x+1) = (2x+1)(2x+9)$

- perfect square trinomial

- 1st & 3rd terms are perfect squares
- factors are identical.

$9x^2 + 24x + 16$

$= (3x+4)(3x+4)$

$= (3x+4)^2$

4+ terms

- common Factors *
- group pairs with common Factors
  - for example, in decomposition

p. 194 - 195
5, 6, 10

Quiz - #5

$V = 15\,625\ cm^3 = l \cdot w \cdot h = l^3$

$\sqrt[3]{l^3} = \sqrt[3]{15\,625}\ cm^3$

$l = 25\ cm$

$A = l \cdot w = l^2 = 25^2 = 625$

$SA = 625 \cdot 6$

$SA = 3750\ cm^2$