From Houghton-Mifflin Precalculus 3rd **Edition**

p701:
14) $(x + 5) + (y - 1)^2 = 0$ → $(y - 1)^2 = -1(x + 5)$ horizontal
   vertex: $(-5, 1)$, $4p = -1$, $p = -1/4$
   focus: $(h + p, k) = (-5.25, 1)$,   directrix: $x = h - p$, $x = -4.75$

15) $(x + \frac{3}{2})^2 = 4(y - 2)$ vertical
   vertex: $(-\frac{3}{2}, 2)$, $4p = 4$, $p = 1$
   focus: $(h, k + p) = (-\frac{3}{2}, 3)$,   directrix: $y = k - p$, $y = 1$

17) $y = \frac{1}{4}(x^2 - 2x + 5)$ → $4y = x^2 - 2x + 5$ → $4y = (x^2 - 2x + 1) + 5 - 1$
   → $4y - 4 = (x - 1)^2$ → $(x - 1)^2 = 4(y - 1)$ vertical
   vertex = $(1, 1)$, $4p = 4$, $p = 1$
   focus: $(h, k + p) = (1, 2)$,   directrix: $y = k - p$, $y = 0$

18) $x = \frac{1}{4}(y^2 + 2y + 33)$ → $4x - 33 = y^2 + 2y$ → $4x - 33 + 1 = y^2 + 2y + 1$
   → $4(x - 8) = (y + 1)^2$ horizontal
   vertex: $(8, -1)$, $4p = 4$, $p = 1$
   focus: $(h + p, k) = (9, -1)$,   directrix: $x = h - p$, $x = 7$

19) $y^2 + 6y + 8x + 25 = 0$ → $y^2 + 6y = -8x - 25$ →
   $y^2 + 6y + 9 = -8x - 25 + 9$ → $(y + 3)^2 = -8(x + 2)$ horizontal
   vertex: $(-2, -3)$, $4p = -8$, $p = -2$
   focus: $(h + p, k) = (-4, -3)$,   directrix: $x = h - p$, $x = 0$

20) $y^2 - 4y - 4x = 0$ → $y^2 - 4y = 4x$ → $y^2 - 4y + 4 = 4x + 4$
   → $(y - 2)^2 = 4(x + 1)$ horizontal
   vertex: $(-1, 2)$, $4p = 4$, $p = 1$
   focus: $(h + p, k) = (0, 2)$,   directrix: $x = h - p$, $x = -2$

p382:
72) $(\cot x + \csc x)(\cot x - \csc x) = \cot^2 x - \csc^2 x = -1$

73) $(\sec x + 1)(\sec x - 1) = \sec^2 x - 1 = \tan^2 x$