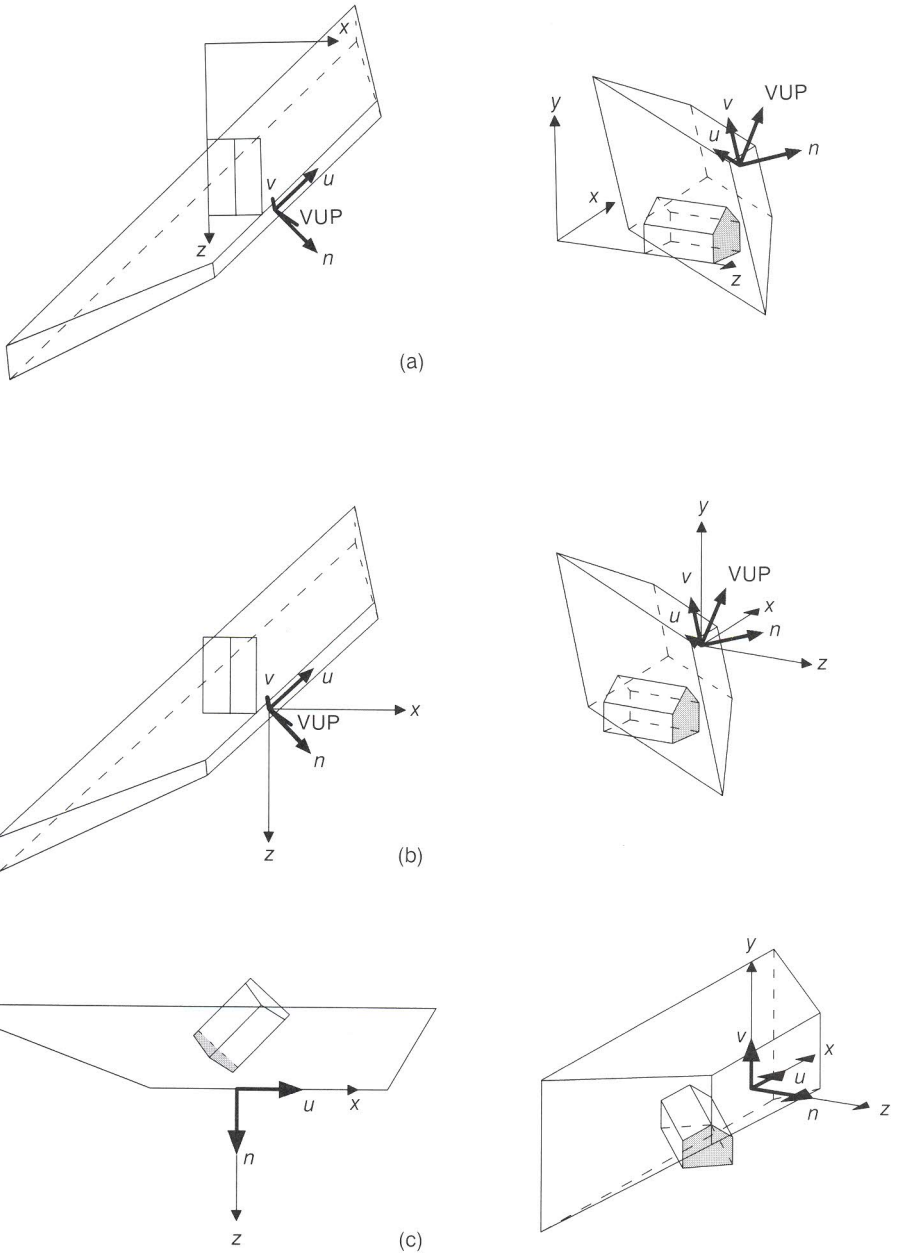
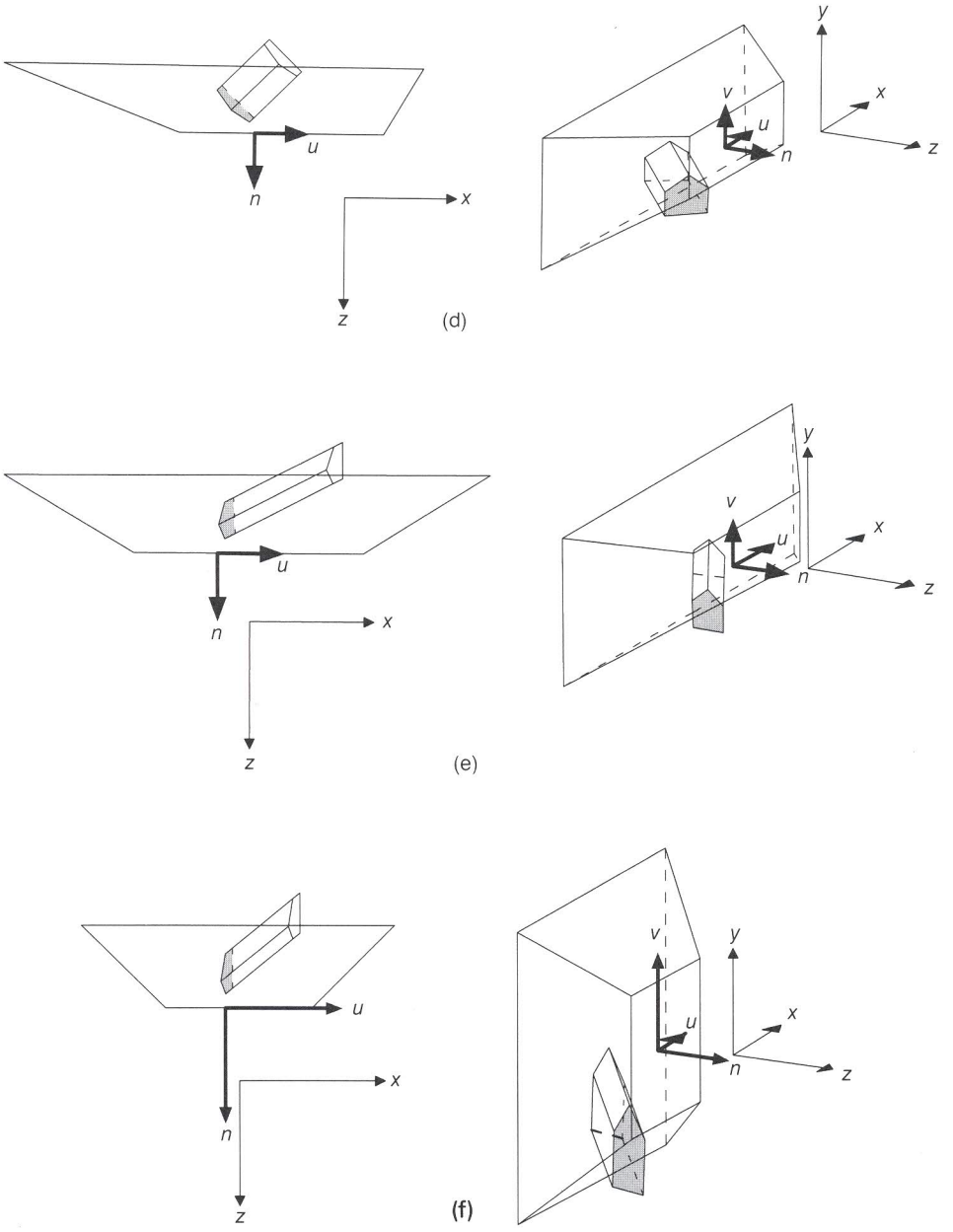
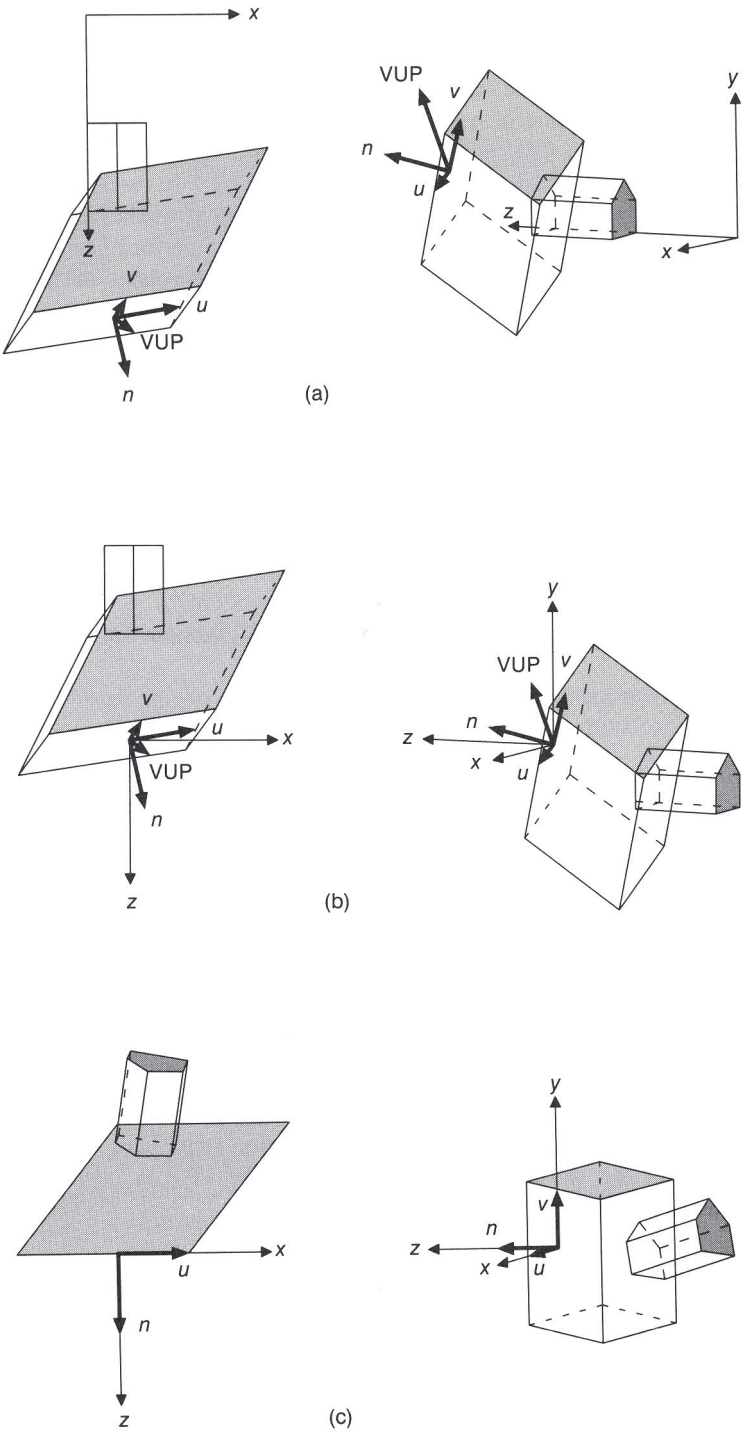


Fig. 6.51 Results at various stages in the perspective-projection viewing pipeline. A top and off-axis parallel projection are shown in each case. (a) The original viewing situation. (b) The VRP has been translated to the origin. (c) The (*u*, *v*, *n*) coordinate system has been rotated to be aligned with the (*x*, *y*, *z*) system. (d) The center of projection (COP) has been translated to the origin. (e) The view volume has been sheared, so the direction of projection (DOP) is parallel to the *z* axis. (f) The view volume



has been scaled into the canonical perspective-projection view volume. The viewing parameters are VRP = (1.0, 1.275, 2.6), VPN = (1.0, 0.253, 1.0), VUP = (0.414, 1.0, 0.253), PRP = (1.6, 0.0, 1.075), Window = (−1.325, 2.25, −0.575, 0.575), $F = 0$, $B = -1.2$. (Figures made with program written by Mr. L. Lu, The George Washington University.)


x
z
v
u
VUP
n
(a)
VUP
v
n
u
y
z
x
v
u
x
VUP
n
z
(b)
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n
z
(c)

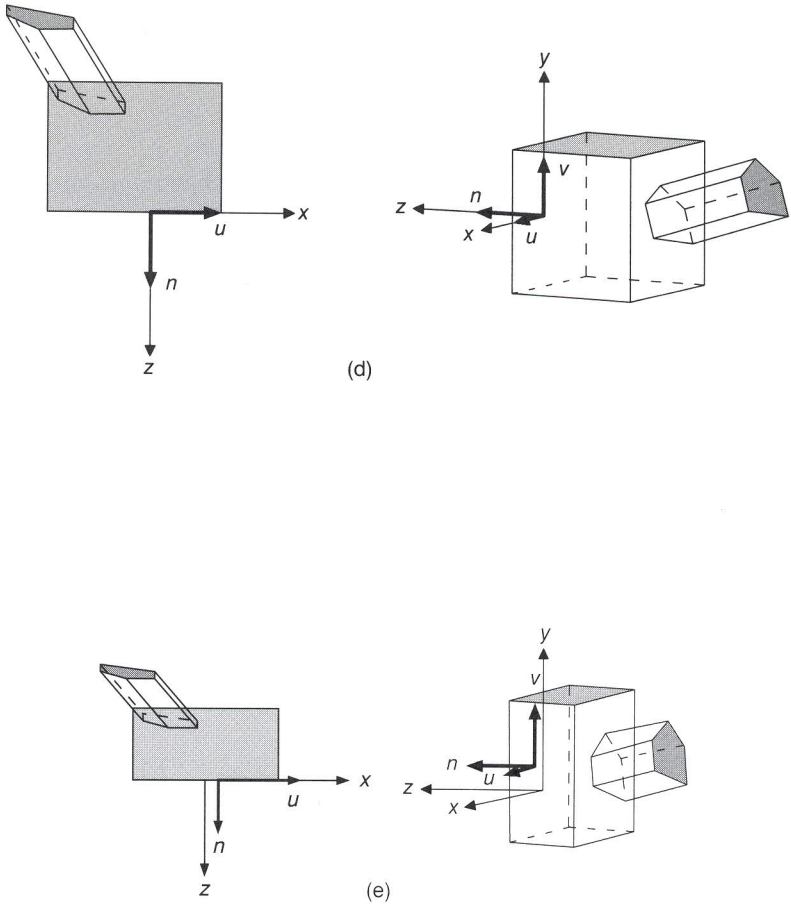

Fig. 6.47 Results at various stages in the parallel-projection viewing pipeline. A top and off-axis parallel projection are shown in each case. (a) The original viewing situation. (b) The VRP has been translated to the origin. (c) The (u, v, n) coordinate system has been rotated to be aligned with the (x, y, z) system. (d) The view volume has been sheared such that the direction of projection (DOP) is parallel to the z axis. (e) The view volume has been translated and scaled into the canonical parallel-projection view volume. The viewing parameters are VRP = (0.325, 0.8, 4.15), VPN = (.227, .267, 1.0), VUP = (.293, 1.0, .227), PRP = (0.6, 0.0, −1.0), Window = (−1.425, 1.0, −1.0, 1.0), $F = 0.0$, $B = -1.75$. (Figures made with program written by Mr. L. Lu, The George Washington University.)