

76. $(-1) \cdot x + 1 = (x + (-1)) \cdot (-1)$ (Symmetry of eq 75)
77. $x^2 + ((-1) \cdot x + ((-1) \cdot x + 1)) = (x + (-1)) \cdot x + (x + (-1)) \cdot (-1)$ (Substitute eq 76 in RHS of 69)
78. $(x + (-1)) \cdot (x + (-1)) = (x + (-1)) \cdot x + (x + (-1)) \cdot (-1)$ (D)
78. $(x + (-1)) \cdot (x + (-1)) = (x + (-1)) \cdot x + (x + (-1)) \cdot (-1)$ (D)
79. $(x + (-1)) \cdot x + (x + (-1)) \cdot (-1) = (x + (-1)) \cdot (x + (-1))$ (Symmetry of eq 78)
80. $x^2 + ((-1) \cdot x + ((-1) \cdot x + 1)) = (x + (-1)) \cdot (x + (-1))$ (Transitivity of eq 77, 79)
81. $x^2 + ((-2x) + 1) = (x + (-1)) \cdot (x + (-1))$ (Transitivity of eq on 60, 80)
82. $x^2 + (2 + ((-2x) + (-1))) = (x + (-1)) \cdot (x + (-1))$ (Transitivity of eq 39, 81)
83. $(x^2 + 2) + ((-2x) + (-1)) = (x + (-1)) \cdot (x + (-1))$ (Transitivity of eq 23, 82)
84. $(x^2 + 2) + (-(-2x + 1)) = (x + (-1)) \cdot (x + (-1))$ (Transitivity of eq 22, 83)
85. $(x + (-1)) \cdot (x + (-1)) < 0$ (Substitute eq 84 in 2c)
86. $(x + (-1)) = (x + (-1))$ (Reflexive prop of eq)
87. $(x + (-1)) > 0$ and $(x + (-1)) < 0$ (Thm 2.1.11 applied on 85)
88. By Trichotomy prop, Stmt 87 is False
89. $\therefore (2x+1) \in P$ is False
90. Let, $-(2x+1) \in P$ hold. \therefore By defn. $2x+1 < 0$
91. $(2x+1) \cdot \frac{(x^2+2)}{(2x+1)} > (2x+1) \cdot 1$ (Thm 2.1.7(c))
92. $(2x+1) \cdot 1 = (2x+1)$ (M3)
93. $(2x+1) \cdot \frac{(x^2+2)}{(2x+1)} > (2x+1)$ (Substitute eq 92 in 91)
94. $(2x+1) \cdot \frac{(x^2+2)}{(2x+1)} = \frac{(x^2+2)}{(2x+1)} \cdot (2x+1)$ (M1)
95. $(2x+1) \cdot \frac{(x^2+2)}{(2x+1)} = \frac{(x^2+2)}{(2x+1)} \cdot (2x+1)$ (Transitivity of eq on 94, 16)
96. $(x^2+2) > (2x+1)$ (Substitute eq 95 in 93)
97. $(x^2+2) + (-(-2x+1)) > (2x+1) + (-(-2x+1))$ (Thm 2.1.7(b))
98. $(x^2+2) + (-(-2x+1)) > 0$ (Substitute eq 19 in 97)
99. $(x + (-1)) \cdot (x + (-1)) > 0$ (Substitute eq 84 in 98)
100. Apply 86, Thm 2.1.10 on 99, we get: $(x + (-1)) > 0$ OR $(x + (-1)) < 0$