

## Math 306 (Barsamian) Group Work on Properties of Relations

Thursday, March 8, 2007

example	Domain	Relation	Reflexive?	Symmetric?	Transitive?
$R_0$	<i>real numbers</i>	$x R_0 y$ means $x - y = 2$			
$R_1$	<i>real numbers</i>	$x R_1 y$ means $x < y$			
$R_2$	<i>real numbers</i>	$x R_2 y$ means $x^2 + y^2 = 1$			
$R_3$	<i>real numbers</i>	$x R_3 y$ means $xy \neq 0$			
$R_4$	<i>real numbers</i>	$x R_4 y$ means $(y - x)(y - 2x) = 0$			
$R_5$	<i>real numbers</i>	$x R_5 y$ means $x \leq y$			
$R_6$	<i>real numbers</i>	$x R_6 y$ means $ x - y  \leq 1$			
$R_7$	<i>integers</i>	$x R_7 y$ means $7 (x - y)$			

Big hint for  $R_4$ .  $(y - x)(y - 2x) = 0$  is logically equivalent to  $(y = x) \text{ OR } (y = 2x)$