**Relations & Functions Problem Sheet**

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Q1]



R {(2,6),(2,9),(2,10),(2,11),(2,12),(5,11),(5,12)}

S {(5,10),(6,11),(7,12)}

RUS {(2,6),(2,9),(2,10),(2,11),(2,12),(5,11),(5,12),(5,10),(6,11),(7,12)}

RnS{(0)}

Q2]



Q3]



Q4] Test the following binary relations on the given set S for reflexivity, symmetry and transitivity.

Q5] The accompanying figure represents a function. What is the domain, the codomain and the range? What is the image of 5? What is the image of 8? What are the preimages of 9? Is this an onto function? Is this a 1-1 function?

Q6] Let be given by Find

Q7] Which of these functions are 1-1? Which are onto? Describe the inverse of the function if it exists?

Q8] Let be given by

Let be given by

Calculate

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