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Computer Science 260: Quiz 2

X The transitive closure of the child relation is the <sup>descendant</sup> Sibling relation. ✓

X Let  $f(x) = 2x$  and let  $g(x) = x^2$ . Hence,  $f \circ g(x) =$   $2x^2$  (Insert ✓ mathematical expression).

X A relation that is reflexive, symmetric and transitive is called an Equivalence relation. ✓

X Consider the following program fragment

$\{X = a + b = a\}$   $s := a;$   $\{X = a + b - s\}$  ✓

$\{x + s = a + b\}$   $x := x + s$   $\{x = a + b\}$  ✓

Use the assignment rule and the concatenation rule to fill in the boxes. Do not use any other rules. Simplify the final result to get  $\{X = b\}$ . ✓

X If  $\{P\}C\{Q\}$  is proven, then  $\{P_1\}C\{Q\}$  is also proven provided  $P_1$  is Weaker than  $P$ . ✓  
Stronger

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$xRx$

$xRy \leftrightarrow yRx$

$xRy \wedge yRz \rightarrow xRz$