CMPUT 272 W25 Tue Quiz #7 30 minutes
Name: ID:

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1. (4 points) Recall that given a set S, the power set of S is denoted $\mathbb{P}(S)$.
   Suppose $A = \{1, 2\}$ and $B = \{2, 3\}$. List all the elements of the following sets:

   (a) $\mathbb{P}(A \cap B)$

   (b) $\mathbb{P}(A \times B)$

(a) 1 pt for correctness; 1 pt for work (can get full pts if correct).
(b) 1 pt for correctness; 1 pt for work (can get full pts if correct).

(please turn page)

2. (4 points) Define $f : \mathbb{Z} \to \mathbb{Z}$ by the rule $f(n) = 2n$, for all integers n.

   (a) Is f one-to-one? Prove or give a counterexample.

1 pt for set up of proof with two arbitrary elements of Z that are not equal
2 pt for steps to show that => f(element_1) != f(element_2)
1 pt for conclusion (f is one-to-one)