

CS 280 FALL 2001

Grading Guide for Section 1.4/1.5

- 1.4.10) 5 points possible. 1 point for examples such as $A=\{a,b\}$, $B=\{\{a,b\},\{a\},\{b\}\}$.
- 1.4.14) 5 points possible. A “yes” answer without explanation receives 1 point. An explanation that involves the union of all subsets in the power sets or considering combinations of the elements receives 2 or 3 points depending on the clarity in the argument.
- 1.5.8) 5 points possible. $\frac{1}{2}$ point deducted for each incorrect/missing number.
- 1.5.10) 5 points possible. $\frac{1}{2}$ point deducted for bad notation. 2 or 3 points given for answers that are completely pictorial lacking written explanation.

Section 1.6 – Grading Guide

4 (a), (b), (c) are 1 point each, (d) is 2 points. In each of them points are shared equally between domain and range. If a mistake propagates, no points are lost for the repeated mistake.

20 Stating “Yes” is 1 point. Proof part is 4 points. If you say “No” you get a 0. A proof based on the number of elements in domain and range of f and g lost 1 point if it does not take infinite sets into account.

26 (a) is 2 points, (b) is 3 points. Whenever you use a Venn diagram for the proof and provide insufficient explanation 1 point is lost regardless of the section. (If you used Venn diagram for both (a) and (b) at least 2 points are lost depending on your explanation.). Attempt to prove by only giving an example gets a 0.

27 5 points. No points for $S \cap T = \emptyset$.

Section 1.6 – Common Mistakes

4 (b) $\{1\}$ is included in the range.
(c) Domain is considered as integers.
(d) Empty string is missed (see page 70) and $\{0\}$ is excluded from the range.

20 Proof attempts based on examples.

26 (a) Proof attempts based on drawing a Venn diagram only, and providing no explanation.

(b) Proof attempts based on drawing a Venn diagram only, and providing no explanation.

27 Giving examples such that $S \cap T = \emptyset$.

A general mistake was not defining what the sets you are using in your solutions.

Section 1.7: Grading Guide/Comments

1.7.6:

1 point per correct answer. (3 points total) No credit given for any deviations from correct answer.

1.7.10:

1 point per correct answer. (4 points total)

A large range of answers for 10(d) is accepted, as long as they “fit” the description of the sequence. Answers such as “ $a_k = \text{square root of } k \text{ rounded up to nearest integer}$ ” not accepted because they do not account for the missing “4” term.

1.7.20:

5 points for correct answer.

3 points for answer that had an “off-by-one” error:

$1 - (1/n)$ or $1 - 1/(n-1)$, etc.

2.5 points for answer that had one correct term (e.g. $1/(n+1)$)

1.7.32

2 points for each correct answer.

For parts (a) – (c):

1 point for determining that the set is “countable,” and another 1 point for the 1-to-1 matching (explanation)

$\frac{1}{2}$ point taken off per part if negative numbers not considered in the “matching;” for part (a), you need to show how numbers such as $-1, -2, -4$, etc. are matched. Similarly for parts (b) and (c).

For part (d):

2 points for correct answer (uncountable). No explanation required, although it might be useful to know why exactly the set is uncountable.