

Name: _____ Score: _____

Math 576 Combinatorial Game Theory

Exam 1

Feb. 19, 2008

1. (20 points) Find the value for the following games.

(a) $\{-2, -1 \mid \frac{1}{2}, 1\}$

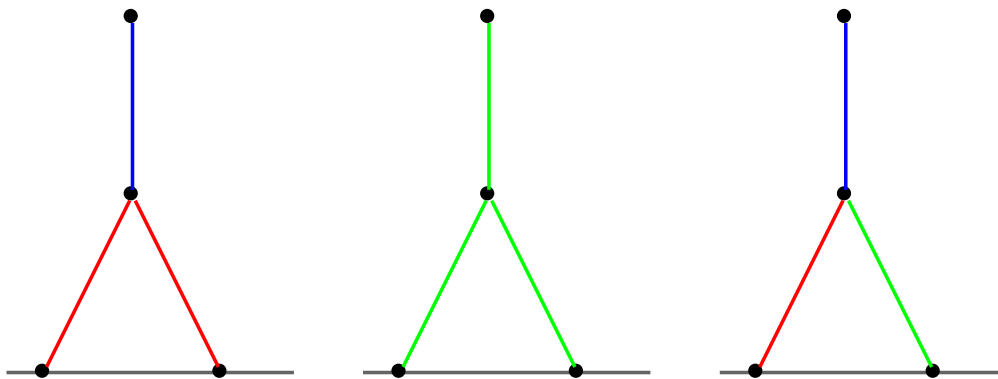
(b) $\{\frac{1}{4} \mid \frac{5}{8}\}$

(c) $*5 + *6 + *7$

(d) $\{0, *, *3, *5 \mid 0, *, *3, *5\}$

| # | Score |
|----------|-------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| Σ | |

2. (30 points) Find the values of the following blue-red-green Hackenbush games.



3. (15 points) Find the value of the following ski-jump game.

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|---|--|---|--|
| L | | | |
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| | | | |

4. (15 points) Find the value of the following Toads-Frogs game.

| | | | |
|---|--|---|---|
| T | | T | F |
|---|--|---|---|

5. (20 points) Let $G = \{0, * \uparrow\}$.

(a) Show $G > 0$.

(b) Show $*$ is a reversible move.

(c) Show $G = \uparrow *$.