Gismo Tank Competition

You may enter the Gismo Tank competition at different levels with different capabilities. At each level you will qualify for a GismoBadge.

NAVIGATION

Navigator Level 1:
Navigate to your blockhouse. No terrain.

Navigator Level 2:
Navigate to your blockhouse around terrain – a mountain specified in the gismoconfig.txt file as:
mountain: x=10 y=10 w=10 h=5

Navigator Level 3:
Navigate to your blockhouse around terrain using the following gismoconfig.txt file:
mountain: x=10 y=10 w=10 h=5
water: x=5 y=5 w=5 h=2
water: x=20 y=18 w=5 h=2
forest: x=22 y=3 w=6 h=4
forest: x=2 y=19 w=6 h=4

Navigator Level 4:
Dynamic positioning of terrain at positions not known by the TankAI until runtime. The terrain configuration will allow at least one path from the tank position to the blockhouses.

Gunery Level 1:
In a one-on-one competition, destroy the enemy tank before your tank is destroyed. The following rules apply:
- There is no terrain
- Tanks have health of 10
- Blockhouse has health of 20
- Tanks have ammo supply of 20 to start
- Tanks increase their health and ammo by 1 for each cycle they are in the blockhouse.
- When firing, tanks are allowed two shot in a row, but then must use one cycle to reload. A tank can reload by sending a negative value of (–1, -1) as the target coordinate. If your tank attempts to fire on a reload cycle, it will need to wait an additional cycle before it can fire again.
- The following rules are used to determine the probability of a hit when a tank fires at another tank.
  - a hit reduces health by 1
  - if your fireX and fireY coordinates are those of the tank AFTER its move request has been processed, your base probability of hit is 100% [if you can fire at where a tank will be next cycle, you score a direct hit]
- If your fireX and fireY coordinates are those of the tank BEFORE its move request has been processed, your base probability of hit is 50%.
- If you are moving when you fire, your probability of hit is reduced by 0.20.
- If your distance to target is \( \leq 10 \), there is no reduction in probability of hit.
- For every distance of 10 beyond 10, the probability of hit will be reduced by 0.10.

**Gunnery Level 2:**
In a one-on-one competition, destroy the enemy tank before your tank is destroyed. The rules are the same for Firing Level 1 except that the terrain from navigator Level 3 will be used.

**Tank Commander Competition Level 1:**
In a one-on-one competition, destroy the enemy tank before your tank is destroyed. The rules are the same for Firing Level 1 except that the terrain will be generated dynamically at game time. There will be a path from your tank to your blockhouse as well as the enemy blockhouse.

**Squad Commander Competition: Level 2**
Three tanks will be assigned to each team. A team wins when all tanks of the opponent team have been destroyed.

**Program Data:**

```java
public static final int maxTankSpeed    = 2;
public static final int minTankSpeed    = -1;
public static final int maxForestSpeed  = 1;
public static final int maxAmmo         = 20;
public static final int maxHealth       = 10;
```

**CODES**
Codes for terrain and tanks and all else you are informed about:
in init and when getMove is called.

EXPLOSION = 0
MOUNTAIN = 1
FOREST = 2
WATER = 3
TANK = 4
BLOCKHSE = 5
DEADTANK = 6
SMOKE = 7