

# Euchre Test 01 Explanation

Run Euchre Test 01 like this.

```
1 $ make euchre.exe
2 $ ./euchre.exe pack.in shuffle 10 Edsger Simple Fran Simple Gabriel Simple
   Herb Simple
```

To run Euchre Test 01 in your visual debugger, configure these command line arguments ([VS Code \(macOS\)](#), [VS Code \(Windows\)](#), [Xcode](#), [Visual Studio](#)):

```
pack.in shuffle 10 Edsger Simple Fran Simple Gabriel Simple Herb Simple
```

**Pro-tip:** Debug differences in game output using `diff -y -B`, which shows differences side-by-side and ignores whitespace. We'll use the `less` pager so we can scroll through the long terminal output. Press `q` to quit.

```
1 $ make euchre.exe
2 $ ./euchre.exe pack.in shuffle 10 Edsger Simple Fran Simple Gabriel Simple
   Herb Simple > euchre_test01.out
3 $ diff -y -B euchre_test01.out.correct euchre_test01.out | less # q to
   quit
```

## Preamble

The arguments are printed first:

```
./euchre.exe pack.in shuffle 10 Edsger Simple Fran Simple Gabriel Simple Herb Simple
```

## Hand 0

Output	Explanation
<div>Hand 0</div> <div>Edsger deals</div>	Attackers - Fran and Herb Defenders - Edsger and Gabriel
	Ranks of suit highest to low

Output	Explanation
<p>Nine of Hearts turned up</p> <p>Fran orders up Hearts</p>	<p>Hearts: J of Hearts, J of Diamonds, A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: K of Clubs, Q of Spades, 9 of Spades, A of Hearts, J of Hearts</p> <p>Gabriel's Hand: A of Clubs, K of Spades, 9 of Clubs, Q of Hearts, J of Diamonds</p> <p>Edsger's Hand: J of Clubs, A of Spades, K of Diamonds, J of Spades, 9 of Hearts</p> <p>Herb's Hand: 10 of Clubs, 10 of Spades, Q of Diamonds, 9 of Diamonds, K of Hearts</p>
<p>King of Clubs led by Fran</p> <p>Ace of Clubs played by Gabriel</p> <p>Ten of Clubs played by Herb</p> <p>Jack of Clubs played by Edsger</p> <p>Gabriel takes the trick</p>	<p>Fran is left of dealer so leads; led_suit = Clubs</p> <p>Gabriel has to follow suit so plays highest club</p> <p>Herb has to follow suit so plays only club</p> <p>Edsger has to follow suit so plays only club</p> <p>No trump was played so highest led_suit wins, which is the Ace</p>
	<p>Fran's Hand: Q of Spades, 9 of Spades, A of Hearts, J of Hearts</p> <p>Gabriel's Hand: K of Spades, 9 of Clubs, Q of Hearts, J of Diamonds</p> <p>Edsger's Hand: A of Spades, K of Diamonds, J of Spades, 9 of Hearts</p> <p>Herb's Hand: 10 of Spades, Q of Diamonds, 9 of Diamonds, K of Hearts</p>
<p>King of Spades led by Gabriel</p> <p>Ten of Spades played by Herb</p>	<p>Gabriel is left of dealer so leads; led_suit = Spades</p> <p>Herb has to follow suit so plays only spade</p> <p>Edsger has to follow suit so plays highest spade</p> <p>Fran has to follow suit so plays highest spade</p>

Output	Explanation
<p>Ace of Spades played by Edsger</p> <p>Queen of Spades played by Fran</p> <p>Edsger takes the trick</p>	<p>No trump was played so highest led_suit wins, which is the Ace</p>
	<p>Fran's Hand: 9 of Spades, A of Hearts, J of Hearts</p> <p>Gabriel's Hand: 9 of Clubs, Q of Hearts, J of Diamonds</p> <p>Edsger's Hand: K of Diamonds, J of Spades, 9 of Hearts</p> <p>Herb's Hand: Q of Diamonds, 9 of Diamonds, K of Hearts</p>
<p>King of Diamonds led by Edsger</p> <p>Nine of Spades played by Fran</p> <p>Nine of Clubs played by Gabriel</p> <p>Queen of Diamonds played by Herb</p> <p>Edsger takes the trick</p>	<p>Edsger is left of dealer so leads; led_suit = Diamonds</p> <p>Fran can't follow suit because no diamonds, so plays lowest card</p> <p>Gabriel can't follow suit so plays lowest card. J of Diamonds is the left bower so considered a heart, not a diamond.</p> <p>Herb has to follow suit so plays highest diamond</p> <p>No trump was played so highest led_suit wins, which is the King</p>
	<p>Fran's Hand: A of Hearts, J of Hearts</p> <p>Gabriel's Hand: Q of Hearts, J of Diamonds</p> <p>Edsger's Hand: J of Spades, 9 of Hearts</p> <p>Herb's Hand: 9 of Diamonds, K of Hearts</p>
<p>Jack of Spades led by Edsger</p> <p>Ace of Hearts played by Fran</p> <p>Queen of Hearts played by Gabriel</p> <p>Nine of Diamonds played by Herb</p> <p>Fran takes the trick</p>	<p>Edsger won last trick so leads; led_suit = Spades</p> <p>Fran can't follow suit so plays lowest card. J of Hearts is right bower so is higher than A of Hearts.</p> <p>Gabriel can't follow suit so plays lowest card. J of Diamonds is left bower so is higher than Q of Hearts.</p> <p>Herb can't follow suit so plays lowest card.</p> <p>Trump played so highest trump wins, which is the Ace of Hearts</p>
	<p>Fran's Hand: J of Hearts</p> <p>Gabriel's Hand: J of Diamonds</p> <p>Edsger's Hand: 9 of Hearts</p> <p>Herb's Hand: K of Hearts</p>

Output	Explanation
<p>Jack of Hearts led by Fran</p> <p>Jack of Diamonds played by Gabriel</p> <p>King of Hearts played by Herb</p> <p>Nine of Hearts played by Edsger</p> <p>Fran takes the trick</p>	<p>Fran won last trick so leads; led_suit = Hearts</p> <p>Gabriel plays last card</p> <p>Herb plays last card</p> <p>Edsger plays last card</p> <p>Trump played so highest trump wins, which is the Ace of Hearts</p>
<p>Edsger and Gabriel win the hand</p> <p>euchred!</p> <p>Edsger and Gabriel have 2 points</p> <p>Fran and Herb have 0 points</p>	<p>because defenders won 3 / 5 tricks</p>

## Hand 1

Output	Explanation
<p>Hand 1</p> <p>Fran deals</p> <p>Nine of Diamonds turned up</p> <p>Gabriel passes</p> <p>Herb passes</p> <p>Edsger orders up Diamonds</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Diamonds: J of Diamonds, J of Hearts, A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Hearts: A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: Q of Clubs, J of Clubs, K of Spades, 9 of Diamonds, 10 of Spades</p> <p>Gabriel's Hand: A of Clubs, K of Clubs, Q of Spades, 10 of Clubs, J of Spades</p> <p>Edsger's Hand: 9 of Clubs, A of Hearts, K of Diamonds, J of</p>

Output	Explanation
	<p>Hearts, A of Diamonds</p> <p>Herb's Hand: 9 of Hearts, Q of Hearts, A of Spades, J of Diamonds, 10 of Diamonds</p>
<p>Ace of Clubs led by Gabriel</p> <p>Nine of Hearts played by Herb</p> <p>Nine of Clubs played by Edsger</p> <p>Queen of Clubs played by Fran</p> <p>Gabriel takes the trick</p>	<p>Gabriel is left of dealer so leads; led_suit = Clubs</p> <p>Herb can't follow suit so plays lowest card</p> <p>Edsger has to follow suit so plays highest club</p> <p>Fran has to follow suit so plays highest club</p> <p>No trump played so highest led_suit wins which is Ace</p>
	<p>Fran's Hand: J of Clubs, K of Spades, 9 of Diamonds, 10 of Spades</p> <p>Gabriel's Hand: K of Clubs, Q of Spades, 10 of Clubs, J of Spades</p> <p>Edsger's Hand: A of Hearts, K of Diamonds, J of Hearts, A of Diamonds</p> <p>Herb's Hand: Q of Hearts, A of Spades, J of Diamonds, 10 of Diamonds</p>
<p>King of Clubs led by Gabriel</p> <p>Queen of Hearts played by Herb</p> <p>Ace of Hearts played by Edsger</p> <p>Jack of Clubs played by Fran</p> <p>Gabriel takes the trick</p>	<p>Gabriel won last trick so leads; led_suit = Clubs</p> <p>Herb can't follow suit so plays lowest card. J of Hearts is the left bower so the second highest trump, making it higher than any Queen.</p> <p>Edsger can't follow suit so plays lowest card. Rest of hand is Trump, which is higher than any other suit.</p> <p>Fran has to follow suit so plays highest club</p> <p>No trump played so highest led_suit wins which is King</p>
	<p>Fran's Hand: K of Spades, 9 of Diamonds, 10 of Spades</p> <p>Gabriel's Hand: Q of Spades, 10 of Clubs, J of Spades</p> <p>Edsger's Hand: K of Diamonds, J of Hearts, A of Diamonds</p> <p>Herb's Hand: A of Spades, J of Diamonds, 10 of Diamonds</p>
<p>Queen of Spades led by Gabriel</p> <p>Ace of Spades played by</p>	<p>Gabriel won last trick so leads; led_suit = Spades</p> <p>Herb has to follow suit so plays highest spade</p> <p>Edsger can't follow suit so plays lowest card. J of Hearts is</p>

Output	Explanation
Herb King of Diamonds played by Edsger King of Spades played by Fran Edsger takes the trick	the left bower so is considered the second highest diamond. Fran has to follow suit so plays highest spade Trump played so highest trump wins, which is King
	Fran's Hand: 9 of Diamonds, 10 of Spades Gabriel's Hand: 10 of Clubs, J of Spades Edsger's Hand: J of Hearts, A of Diamonds Herb's Hand: J of Diamonds, 10 of Diamonds
Jack of Hearts led by Edsger Nine of Diamonds played by Fran Ten of Clubs played by Gabriel Jack of Diamonds played by Herb Herb takes the trick	Edsger won last trick so leads; led_suit = Diamonds. J of Hearts is left bower so is considered trump (aka diamonds). Fran has to follow suit so plays highest diamond Gabriel can't follow suit so plays lowest card. Herb has to follow suit so plays highest diamond. Diamonds is trump so J of Diamonds is higher than all Diamonds. Trump played so highest trump wins, which is right bower (aka J of Diamonds)
	Fran's Hand: 10 of Spades Gabriel's Hand: J of Spades Edsger's Hand: A of Diamonds Herb's Hand: 10 of Diamonds
Ten of Diamonds led by Herb Ace of Diamonds played by Edsger Ten of Spades played by Fran Jack of Spades played by Gabriel Edsger takes the trick	Herb won last trick so leads; led_suit = Diamonds Edsger plays last card Fran plays last card Gabriel plays last card Trump played so highest trump wins, which is Ace of Diamonds
Edsger and Gabriel win the hand Edsger and Gabriel have 3 points	Attackers won 4 / 5 tricks so got 1 point

Output	Explanation
Fran and Herb have 0 points	

## Hand 2

Output	Explanation
<p>Hand 2</p> <p>Gabriel deals</p> <p>King of Diamonds turned up</p> <p>Herb passes</p> <p>Edsger passes</p> <p>Fran passes</p> <p>Gabriel orders up Diamonds</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Diamonds: J of Diamonds, J of Hearts, A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Hearts: A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: Q of Clubs, Q of Spades, 10 of Hearts, J of Diamonds, J of Spades</p> <p>Gabriel's Hand: K of Clubs, K of Spades, Q of Diamonds, J of Hearts, K of Diamonds</p> <p>Edsger's Hand: J of Clubs, 10 of Spades, 9 of Hearts, 10 of Diamonds, 9 of Diamonds</p> <p>Herb's Hand: A of Clubs, A of Spades, 10 of Clubs, 9 of Spades, 9 of Clubs</p>
<p>Ace of Clubs led by Herb</p> <p>Jack of Clubs played by Edsger</p> <p>Queen of Clubs played by Fran</p> <p>King of Clubs played by Gabriel</p> <p>Herb takes the trick</p>	<p>Herb is left of dealer so leads highest card; led_suit = Clubs</p> <p>Edsger has to follow suit so plays highest club</p> <p>Fran has to follow suit so plays highest club</p> <p>Gabriel has to follow suit so plays highest club</p> <p>No trump played so highest led_suit wins, which is Ace</p>
	<p>Fran's Hand: Q of Spades, 10 of Hearts, J of Diamonds, J of Spades</p>

Output	Explanation
	<p>Gabriel's Hand: K of Spades, Q of Diamonds, J of Hearts, K of Diamonds</p> <p>Edsger's Hand: 10 of Spades, 9 of Hearts, 10 of Diamonds, 9 of Diamonds</p> <p>Herb's Hand: A of Spades, 10 of Clubs, 9 of Spades, 9 of Clubs</p>
<p>Ace of Spades led by Herb</p> <p>Ten of Spades played by Edsger</p> <p>Queen of Spades played by Fran</p> <p>King of Spades played by Gabriel</p> <p>Herb takes the trick</p>	<p>Herb won last trick so leads highest card; led_suit = Spades</p> <p>Edsger has to follow suit so plays highest club</p> <p>Fran has to follow suit so plays highest spade</p> <p>Gabriel has to follow suit so plays highest spade</p> <p>No trump played so highest led_suit wins, which is Ace</p>
	<p>Fran's Hand: 10 of Hearts, J of Diamonds, J of Spades</p> <p>Gabriel's Hand: Q of Diamonds, J of Hearts, K of Diamonds</p> <p>Edsger's Hand: 9 of Hearts, 10 of Diamonds, 9 of Diamonds</p> <p>Herb's Hand: 10 of Clubs, 9 of Spades, 9 of Clubs</p>
<p>Ten of Clubs led by Herb</p> <p>Nine of Hearts played by Edsger</p> <p>Ten of Hearts played by Fran</p> <p>Queen of Diamonds played by Gabriel</p> <p>Gabriel takes the trick</p>	<p>Herb won last trick so leads highest card; led_suit = Clubs</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel can't follow suit so plays lowest card. J of Hearts is the left bower, so is the second highest trump.</p> <p>Trump played so highest trump wins, which is Q of Diamonds</p>
	<p>Fran's Hand: J of Diamonds, J of Spades</p> <p>Gabriel's Hand: J of Hearts, K of Diamonds</p> <p>Edsger's Hand: 10 of Diamonds, 9 of Diamonds</p> <p>Herb's Hand: 9 of Spades, 9 of Clubs</p>
<p>Jack of Hearts led by Gabriel</p> <p>Nine of Spades played by Herb</p> <p>Ten of Diamonds played by Edsger</p>	<p>Gabriel won last trick so leads highest card; led_card = Diamonds because J of Hearts is the left bower so is second highest trump</p> <p>Herb can't follow suit so plays lowest card</p> <p>Edsger has to follow suit so plays highest diamond</p> <p>Fran has to follow suit so plays highest diamond. J of</p>



Output	Explanation
<p>Jack of Diamonds played by Fran</p> <p>Fran takes the trick</p>	<p>Diamonds is right bower so is highest diamond.</p> <p>Trump played so highest trump wins, which is J of Diamonds</p>
	<p>Fran's Hand: J of Spades</p> <p>Gabriel's Hand: K of Diamonds</p> <p>Edsger's Hand: 9 of Diamonds</p> <p>Herb's Hand: 9 of Clubs</p>
<p>Jack of Spades led by Fran</p> <p>King of Diamonds played by Gabriel</p> <p>Nine of Clubs played by Herb</p> <p>Nine of Diamonds played by Edsger</p> <p>Gabriel takes the trick</p>	<p>Fran won last trick so leads; led_suit = Spades</p> <p>Gabriel plays last card</p> <p>Herb plays last card</p> <p>Edsger plays last card</p> <p>Trump played so highest trump wins, which is K of Diamonds</p>
<p>Fran and Herb win the hand euchred!</p> <p>Edsger and Gabriel have 3 points</p> <p>Fran and Herb have 2 points</p>	<p>Defenders won 3 / 5 tricks</p>

## Hand 3

Output	Explanation
<p>Hand 3</p> <p>Herb deals</p> <p>Queen of Clubs turned up</p> <p>Edsger passes</p> <p>Fran passes</p> <p>Gabriel passes</p> <p>Herb passes</p> <p>Edsger orders up Spades</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Spades: J of Spades, J of Clubs, A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p> <p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, J of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, 10 of Clubs, 9 of Clubs</p>

Output	Explanation
	Hearts: A of Hearts, K of Hearts, Q of Hearts, J of Hearts, 10 Hearts, 9 Hearts
	<p>Fran's Hand: 9 of Diamonds, J of Hearts, K of Diamonds, K of Spades, J of Clubs</p> <p>Gabriel's Hand: A of Clubs, K of Hearts, Q of Diamonds, 9 of Hearts, 9 of Spades</p> <p>Edsger's Hand: K of Clubs, 9 of Clubs, J of Diamonds, 10 of Spades, A of Spades</p> <p>Herb's Hand: 10 of Clubs, Q of Hearts, A of Diamonds, 10 of Diamonds, J of Spades</p>
<p>King of Clubs led by Edsger</p> <p>Nine of Diamonds played by Fran</p> <p>Ace of Clubs played by Gabriel</p> <p>Ten of Clubs played by Herb</p> <p>Gabriel takes the trick</p>	<p>Edsger is left of dealer so leads highest non-trump card; led_suit = Clubs</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel has to follow suit so plays highest club</p> <p>Herb has to follow suit so plays highest club</p> <p>No trump played so highest led_suit card wins, which is K of Clubs</p>
	<p>Fran's Hand: J of Hearts, K of Diamonds, K of Spades, J of Clubs</p> <p>Gabriel's Hand: K of Hearts, Q of Diamonds, 9 of Hearts, 9 of Spades</p> <p>Edsger's Hand: 9 of Clubs, J of Diamonds, 10 of Spades, A of Spades</p> <p>Herb's Hand: Q of Hearts, A of Diamonds, 10 of Diamonds, J of Spades</p>
<p>King of Hearts led by Gabriel</p> <p>Queen of Hearts played by Herb</p> <p>Nine of Clubs played by Edsger</p> <p>Jack of Hearts played by Fran</p> <p>Gabriel takes the trick</p>	<p>Gabriel won last trick so leads highest non-trump; led_suit = Hearts</p> <p>Herb has to follow suit so plays highest heart</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran has to follow suit so plays highest heart</p> <p>No trump played so highest led_suit card wins, which is K of Hearts</p>

Output	Explanation
	<p>Fran's Hand: K of Diamonds, K of Spades, J of Clubs</p> <p>Gabriel's Hand: Q of Diamonds, 9 of Hearts, 9 of Spades</p> <p>Edsger's Hand: J of Diamonds, 10 of Spades, A of Spades</p> <p>Herb's Hand: A of Diamonds, 10 of Diamonds, J of Spades</p>
<p>Queen of Diamonds led by Gabriel</p> <p>Ace of Diamonds played by Herb</p> <p>Jack of Diamonds played by Edsger</p> <p>King of Diamonds played by Fran</p> <p>Herb takes the trick</p>	<p>Gabriel won last trick so leads highest non-trump card; led_suit = Diamonds</p> <p>Herb has to follow suit so plays highest diamond</p> <p>Edsger has to follow suit so plays highest diamond</p> <p>Fran has to follow suit so plays highest diamond</p> <p>No trump played so highest led_suit card wins, which is A of Diamonds</p>
	<p>Fran's Hand: K of Spades, J of Clubs</p> <p>Gabriel's Hand: 9 of Hearts, 9 of Spades</p> <p>Edsger's Hand: 10 of Spades, A of Spades</p> <p>Herb's Hand: 10 of Diamonds, J of Spades</p>
<p>Ten of Diamonds led by Herb</p> <p>Ten of Spades played by Edsger</p> <p>King of Spades played by Fran</p> <p>Nine of Hearts played by Gabriel</p> <p>Fran takes the trick</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = Diamonds</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran can't follow suit so plays lowest card. J of Clubs is left bower so is the second highest trump (aka spade).</p> <p>Gabriel can't follow suit so plays lowest card</p> <p>Trump played so highest trump wins, which is K of Spades</p>
	<p>Fran's Hand: J of Clubs</p> <p>Gabriel's Hand: 9 of Spades</p> <p>Edsger's Hand: A of Spades</p> <p>Herb's Hand: J of Spades</p>

Output	Explanation
<p>Jack of Clubs led by Fran</p> <p>Nine of Spades played by Gabriel</p> <p>Jack of Spades played by Herb</p> <p>Ace of Spades played by Edsger</p> <p>Herb takes the trick</p>	<p>Fran won last trick so leads highest non-trump card; No non-trump cards so led_suit = Spades</p> <p>Gabriel plays last card</p> <p>Herb plays last card</p> <p>Edsger plays last card</p> <p>Trump played so highest trump wins, which is J of Spades</p>
<p>Fran and Herb win the hand euchred!</p> <p>Edsger and Gabriel have 3 points</p> <p>Fran and Herb have 4 points</p>	<p>Defenders won 3 / 5 tricks</p>

## Hand 4

Output	Explanation
<p>Hand 4</p> <p>Edsger deals</p> <p>Queen of Diamonds turned up</p> <p>Fran orders up Diamonds</p>	<p>Attackers - Fran and Herb</p> <p>Defenders - Edsger and Gabriel</p> <p>Ranks of suit highest to low</p> <p>Diamonds: J of Diamonds, J of Hearts, A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Hearts: A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: 10 of Clubs, 9 of Hearts, 10 of Spades, J of Diamonds, J of Hearts</p> <p>Gabriel's Hand: Q of Clubs, Q of Hearts, K of Spades, K of Diamonds, J of Spades</p> <p>Edsger's Hand: J of Clubs, 10 of Hearts, 9 of Clubs, Q of Diamonds, 10 of Diamonds</p>

Output	Explanation
	Herb's Hand: K of Clubs, A of Hearts, A of Spades, A of Diamonds, 9 of Diamonds
<p>Ten of Clubs led by Fran</p> <p>Queen of Clubs played by Gabriel</p> <p>King of Clubs played by Herb</p> <p>Jack of Clubs played by Edsger</p> <p>Herb takes the trick</p>	<p>Fran is left of dealer so leads highest non-trump card; led_suit = Clubs</p> <p>Gabriel has to follow suit so plays highest club</p> <p>Herb has to follow suit so plays highest club</p> <p>Edsger has to follow suit so plays highest club</p> <p>No trump played so highest led_suit card wins, which is K of Clubs</p>
	<p>Fran's Hand: 9 of Hearts, 10 of Spades, J of Diamonds, J of Hearts</p> <p>Gabriel's Hand: Q of Hearts, K of Spades, K of Diamonds, J of Spades</p> <p>Edsger's Hand: 10 of Hearts, 9 of Clubs, Q of Diamonds, 10 of Diamonds</p> <p>Herb's Hand: A of Hearts, A of Spades, A of Diamonds, 9 of Diamonds</p>
<p>Ace of Hearts led by Herb</p> <p>Ten of Hearts played by Edsger</p> <p>Nine of Hearts played by Fran</p> <p>Queen of Hearts played by Gabriel</p> <p>Herb takes the trick</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = Hearts</p> <p>Edsger has to follow suit so plays highest heart</p> <p>Fran has to follow suit so plays highest heart. J of Hearts is left bower so is considered a Diamond not a Heart</p> <p>Gabriel has to follow suit so plays highest heart</p> <p>No trump played so highest led_suit card wins, which is A of Hearts</p>
	<p>Fran's Hand: 10 of Spades, J of Diamonds, J of Hearts</p> <p>Gabriel's Hand: K of Spades, K of Diamonds, J of Spades</p> <p>Edsger's Hand: 9 of Clubs, Q of Diamonds, 10 of Diamonds</p> <p>Herb's Hand: A of Spades, A of Diamonds, 9 of Diamonds</p>
<p>Ace of Spades led by Herb</p> <p>Nine of Clubs played by Edsger</p> <p>Ten of Spades played by Fran</p> <p>King of Spades played by</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = Spades</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran has to follow suit so plays highest spade</p> <p>Gabriel as to follow suit so plays highest spade</p>

Output	Explanation
Gabriel Herb takes the trick	No trump played so highest led_suit card wins, which is A of Spades
	Fran's Hand: J of Diamonds, J of Hearts Gabriel's Hand: K of Diamonds, J of Spades Edsger's Hand: Q of Diamonds, 10 of Diamonds Herb's Hand: A of Diamonds, 9 of Diamonds
Ace of Diamonds led by Herb Queen of Diamonds played by Edsger Jack of Diamonds played by Fran King of Diamonds played by Gabriel Fran takes the trick	Herb won last trick so lead highest non-trump card; led_suit = Diamonds Edsger has to follow suit so plays highest diamond  Fran has to follow suit so plays highest diamond. J of Diamonds is the right bower so is higher than all other diamonds Gabriel has to follow suit so plays highest diamond Trump played so highest trump card wins, which is J of Diamonds
	Fran's Hand: J of Hearts Gabriel's Hand: J of Spades Edsger's Hand: 10 of Diamonds Herb's Hand: 9 of Diamonds
Jack of Hearts led by Fran Jack of Spades played by Gabriel Nine of Diamonds played by Herb Ten of Diamonds played by Edsger Fran takes the trick	Fran won last trick so leads highest non-trump card; No non-trump cards so led_suit = Diamonds Gabriel plays last card Herb plays last card Edsger plays last card Trump played so highest trump card wins, which is J of Hearts (aka left bower)
Fran and Herb win the hand march! Edsger and Gabriel have 3 points Fran and Herb have 6 points	Attackers won 5 / 5 tricks so get 2 points

## Hand 5

Output	Explanation
<p>Hand 5</p> <p>Fran deals</p> <p>Ace of Diamonds turned up</p> <p>Gabriel passes</p> <p>Herb passes</p> <p>Edsger passes</p> <p>Fran passes</p> <p>Gabriel orders up Hearts</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Hearts: J of Hearts, J of Diamonds, A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: K of Spades, K of Clubs, J of Clubs, J of Diamonds, K of Hearts</p> <p>Gabriel's Hand: J of Spades, 9 of Clubs, 9 of Diamonds, J of Hearts, 9 of Hearts</p> <p>Edsger's Hand: Q of Spades, 10 of Clubs, 10 of Spades, 10 of Hearts, K of Diamonds</p> <p>Herb's Hand: 9 of Spades, Q of Clubs, 10 of Diamonds, Q of Hearts, Q of Diamonds</p>
<p>Jack of Spades led by Gabriel</p> <p>Nine of Spades played by Herb</p> <p>Queen of Spades played by Edsger</p> <p>King of Spades played by Fran</p> <p>Fran takes the trick</p>	<p>Gabriel is left of dealer so leads highest non-trump card; led_suit = Spades</p> <p>Herb has to follow suit so plays highest spade</p> <p>Edsger has to follow suit so plays highest spade</p> <p>Fran has to follow suit so plays highest spade</p> <p>No trump played so highest led_suit card wins, which is K of Spades</p>
	<p>Fran's Hand: K of Clubs, J of Clubs, J of Diamonds, K of Hearts</p> <p>Gabriel's Hand: 9 of Clubs, 9 of Diamonds, J of Hearts, 9 of Hearts</p> <p>Edsger's Hand: 10 of Clubs, 10 of Spades, 10 of Hearts, K of Diamonds</p>

Output	Explanation
	Herb's Hand: Q of Clubs, 10 of Diamonds, Q of Hearts, Q of Diamonds
<p>King of Clubs led by Fran</p> <p>Nine of Clubs played by Gabriel</p> <p>Queen of Clubs played by Herb</p> <p>Ten of Clubs played by Edsger</p> <p>Fran takes the trick</p>	<p>Fran won the last trick so she leads her highest non-trump card; led_suit = Clubs</p> <p>Gabriel has to follow suit so plays highest club</p> <p>Herb has to follow suit so plays highest club</p> <p>Edsger has to follow suit so plays highest club</p> <p>No trump played so highest led_suit card wins, which is K of Clubs</p>
	<p>Fran's Hand: J of Clubs, J of Diamonds, K of Hearts</p> <p>Gabriel's Hand: 9 of Diamonds, J of Hearts, 9 of Hearts</p> <p>Edsger's Hand: 10 of Spades, 10 of Hearts, K of Diamonds</p> <p>Herb's Hand: 10 of Diamonds, Q of Hearts, Q of Diamonds</p>
<p>Jack of Clubs led by Fran</p> <p>Nine of Diamonds played by Gabriel</p> <p>Ten of Diamonds played by Herb</p> <p>Ten of Spades played by Edsger</p> <p>Fran takes the trick</p>	<p>Fran won the last trick so she leads her highest non-trump card; led_suit = Clubs</p> <p>Gabriel can't follow suit so plays lowest card; hearts is trump so it is higher than all cards of other suits, including diamonds</p> <p>Herb can't follow suit so plays lowest card</p> <p>Edsger can't follow suit so plays lowest card; hearts is trump so it is higher than all cards of other suits, including diamonds</p> <p>No trump played so highest led_suit card wins, which is J of Clubs</p>
	<p>Fran's Hand: J of Diamonds, K of Hearts</p> <p>Gabriel's Hand: J of Hearts, 9 of Hearts</p> <p>Edsger's Hand: 10 of Hearts, K of Diamonds</p> <p>Herb's Hand: Q of Hearts, Q of Diamonds</p>
<p>Jack of Diamonds led by Fran</p> <p>Jack of Hearts played by Gabriel</p> <p>Queen of Hearts played by Herb</p> <p>Ten of Hearts played by Edsger</p> <p>Gabriel takes the trick</p>	<p>Fran won last trick so she leads her highest non-trump card; no non-trump in hand because J of diamonds is left bower and considered a heart; led_suit = Heart</p> <p>Gabriel has to follow suit so plays highest heart</p> <p>Herb has to follow suit so plays highest heart</p> <p>Edsger has to follow suit so plays highest heart</p> <p>Trump is played so highest trump wins, which is J of Hearts</p>



Output	Explanation
	Fran's Hand: K of Hearts Gabriel's Hand: 9 of Hearts Edsger's Hand: K of Diamonds Herb's Hand: Q of Diamonds
Nine of Hearts led by Gabriel Queen of Diamonds played by Herb King of Diamonds played by Edsger King of Hearts played by Fran Fran takes the trick	Gabriel won last trick so he leads his highest non-trump card; no non-trump in hand so plays highest trump; led_suit = Hearts Herb plays last card Edsger plays last card Fran plays last card Trump played so highest trump wins, which is K of Hearts
Fran and Herb win the hand euchred! Edsger and Gabriel have 3 points Fran and Herb have 8 points	Defenders won 3 / 5 so they get 2 points

## Hand 6

Output	Explanation
	Attackers - Fran and Herb Defenders - Edsger and Gabriel
Hand 6 Gabriel deals Ten of Hearts turned up Herb passes Edsger passes Fran orders up Hearts	Ranks of suit highest to low Hearts: J of Hearts, J of Diamonds, A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades

Output	Explanation
	<p>Fran's Hand: 9 of Clubs, A of Clubs, J of Hearts, Q of Clubs, K of Hearts</p> <p>Gabriel's Hand: K of Spades, 9 of Hearts, A of Hearts, 10 of Hearts, Q of Hearts</p> <p>Herb's Hand: K of Diamonds, 9 of Spades, J of Diamonds, 9 of Diamonds, J of Spades</p> <p>Edsger's Hand: A of Diamonds, K of Clubs, 10 of Diamonds, J of Clubs, Q of Diamonds</p>
<p>King of Diamonds led by Herb</p> <p>Ace of Diamonds played by Edsger</p> <p>Nine of Clubs played by Fran</p> <p>King of Spades played by Gabriel</p> <p>Edsger takes the trick</p>	<p>Herb is left of dealer so leads highest non-trump card; led_suit = Diamonds</p> <p>Edsger has to follow suit so plays highest diamond</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel can't follow suit so plays lowest card; Hearts is trump making it higher than all cards in all other suits</p> <p>No trump played so highest led_suit card wins, which is A of Daimonds</p>
	<p>Fran's Hand: A of Clubs, J of Hearts, Q of Clubs, K of Hearts</p> <p>Gabriel's Hand: 9 of Hearts, A of Hearts, 10 of Hearts, Q of Hearts</p> <p>Herb's Hand: 9 of Spades, J of Diamonds, 9 of Diamonds, J of Spades</p> <p>Edsger's Hand: K of Clubs, 10 of Diamonds, J of Clubs, Q of Diamonds</p>
<p>King of Clubs led by Edsger</p> <p>Ace of Clubs played by Fran</p> <p>Nine of Hearts played by Gabriel</p> <p>Nine of Spades played by Herb</p> <p>Gabriel takes the trick</p>	<p>Edsger won last trick so he leads his highest non-trump card; led_suit = clubs</p> <p>Fran has to follow suit so plays highest club</p> <p>Gabriel can't follow suit so plays lowest card</p> <p>Herb can't follow suit so plays lowest card in hard</p> <p>Trump played so highest trump wins, which is 9 of Hearts</p>
	<p>Fran's Hand: J of Hearts, Q of Clubs, K of Hearts</p> <p>Gabriel's Hand: A of Hearts, 10 of Hearts, Q of Hearts</p>

Output	Explanation
	Herb's Hand: J of Diamonds, 9 of Diamonds, J of Spades Edsger's Hand: 10 of Diamonds, J of Clubs, Q of Diamonds
Ace of Hearts led by Gabriel Jack of Diamonds played by Herb Ten of Diamonds played by Edsger Jack of Hearts played by Fran Fran takes the trick	Gabriel won last trick so he leads highest non-trump card; no non-trump card in hand so plays highest trump card; led_suit = Hearts Herb has to follow suit so plays highest heart; J of Diamonds is left bower so considered a trump Edsger can't follow suit so plays lowest card Fran has to follow suit so plays highest heart Trump played so highest trump card wins, which is J of Hearts
	Fran's Hand: Q of Clubs, K of Hearts Gabriel's Hand: 10 of Hearts, Q of Hearts Herb's Hand: 9 of Diamonds, J of Spades Edsger's Hand: J of Clubs, Q of Diamonds
Queen of Clubs led by Fran Ten of Hearts played by Gabriel Nine of Diamonds played by Herb Jack of Clubs played by Edsger Gabriel takes the trick	Fran won last trick so she leads highest non-trump card; led_suit = Clubs Gabriel can't follow suit so plays lowest card Herb can't follow suit so plays lowest card Edsger has to follow suit Trump played so highest trump card wins, which is 10 of Hearts
	Fran's Hand: K of Hearts Gabriel's Hand: Q of Hearts Herb's Hand: J of Spades Edsger's Hand: Q of Diamonds

Output	Explanation
<p>Queen of Hearts led by Gabriel</p> <p>Jack of Spades played by Herb</p> <p>Queen of Diamonds played by Edsger</p> <p>King of Hearts played by Fran</p> <p>Fran takes the trick</p>	<p>Gabriel won last trick so he leads highest non-trump card; no non-trump card in hand so leads highest trump; led_suit = Hearts</p> <p>Herb plays last card</p> <p>Edsger plays last card</p> <p>Fran plays last card</p> <p>Trump played so highest trump card wins, which is K of Hearts</p>
<p>Edsger and Gabriel win the hand</p> <p>euchred!</p> <p>Edsger and Gabriel have 5 points</p> <p>Fran and Herb have 8 points</p>	<p>Defenders won 3 / 5 tricks so got 2 points</p>

## Hand 7

Output	Explanation
<p>Hand 7</p> <p>Herb deals</p> <p>King of Hearts turned up</p> <p>Edsger passes</p> <p>Fran passes</p> <p>Gabriel orders up Hearts</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Hearts: J of Hearts, J of Diamonds, A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: A of Diamonds, K of Spades, 10 of Clubs, 10 of Hearts, J of Clubs</p> <p>Gabriel's Hand: Q of Diamonds, A of Spades, J of Spades, J of Diamonds, A of Hearts</p>

Output	Explanation
	<p>Edsger's Hand: K of Diamonds, 9 of Spades, Q of Clubs, 9 of Hearts, K of Clubs</p> <p>Herb's Hand: 10 of Diamonds, Q of Spades, 9 of Diamonds, K of Hearts, Q of Hearts</p>
<p>King of Diamonds led by Edsger</p> <p>Ace of Diamonds played by Fran</p> <p>Queen of Diamonds played by Gabriel</p> <p>Ten of Diamonds played by Herb</p> <p>Fran takes the trick</p>	<p>Edsger is left of dealer so leads highest non-trump card; led_suit = Diamonds</p> <p>Fran has to follow suit so plays highest diamond</p> <p>Gabriel has to follow suit so plays highest diamond</p> <p>Herb has to follow suit so plays highest diamond</p> <p>No trump played so highest led_suit card wins, which is A of Diamonds</p>
	<p>Fran's Hand: K of Spades, 10 of Clubs, 10 of Hearts, J of Clubs</p> <p>Gabriel's Hand: A of Spades, J of Spades, J of Diamonds, A of Hearts</p> <p>Edsger's Hand: 9 of Spades, Q of Clubs, 9 of Hearts, K of Clubs</p> <p>Herb's Hand: Q of Spades, 9 of Diamonds, K of Hearts, Q of Hearts</p>
<p>King of Spades led by Fran</p> <p>Ace of Spades played by Gabriel</p> <p>Queen of Spades played by Herb</p> <p>Nine of Spades played by Edsger</p> <p>Gabriel takes the trick</p>	<p>Fran won last trick so leads highest non-trump card; led_suit = Spades</p> <p>Gabriel has to follow suit so plays highest spade</p> <p>Herb has to follow suit so plays highest spade</p> <p>Edsger has to follow suit so plays highest spade</p> <p>No trump played so highest led_suit card wins, which is A of Spades</p>
	<p>Fran's Hand: 10 of Clubs, 10 of Hearts, J of Clubs</p> <p>Gabriel's Hand: J of Spades, J of Diamonds, A of Hearts</p> <p>Edsger's Hand: Q of Clubs, 9 of Hearts, K of Clubs</p> <p>Herb's Hand: 9 of Diamonds, K of Hearts, Q of Hearts</p>
<p>Jack of Spades led by Gabriel</p> <p>Nine of Diamonds played by</p>	<p>Gabriel won last trick so leads highest non-trump card; led_suit = Spades</p> <p>Herb can't follow suit so plays lowest card</p>

Output	Explanation
Herb Queen of Clubs played by Edsger Ten of Clubs played by Fran Gabriel takes the trick	Edsger can't follow suit so plays lowest card; Hearts is trump making it higher than all cards in all other suits Fran can't follow suit so plays lowest card; Hearts is trump making it higher than all cards in all other suits No trump played so highest led_suit card wins, which is J of Spades
	Fran's Hand: 10 of Hearts, J of Clubs Gabriel's Hand: J of Diamonds, A of Hearts Edsger's Hand: 9 of Hearts, K of Clubs Herb's Hand: K of Hearts, Q of Hearts
Jack of Diamonds led by Gabriel King of Hearts played by Herb Nine of Hearts played by Edsger Ten of Hearts played by Fran Gabriel takes the trick	Gabriel won last trick so leads highest non-trump card; No non-trump cards in hand because J of Diamonds is left bower so considered a Heart; led_suit = Heart Herb has to follow suit so plays highest heart Edsger has to follow suit so plays highest heart Fran has to follow suit so plays highest heart Trump played so highest trump wins, which is J of Diamonds
	Fran's Hand: J of Clubs Gabriel's Hand: A of Hearts Edsger's Hand: K of Clubs Herb's Hand: Q of Hearts
Ace of Hearts led by Gabriel Queen of Hearts played by Herb King of Clubs played by Edsger Jack of Clubs played by Fran Gabriel takes the trick	Gabriel won last trick so leads highest non-trump; led_suit = Hearts Herb plays last card Edsger plays last card Fran plays last card Trump played so highest trump wins, which is A of Hearts
Edsger and Gabriel win the hand Edsger and Gabriel have 6 points	Attackers win 4 / 5 tricks so win 1 point

Output	Explanation
Fran and Herb have 8 points	

## Hand 8

Output	Explanation
<p>Hand 8</p> <p>Edsger deals</p> <p>Ace of Hearts turned up</p> <p>Fran passes</p> <p>Gabriel orders up Hearts</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Hearts: J of Hearts, J of Diamonds, A of Hearts, K of Hearts, Q of Hearts, 10 Hearts, 9 Hearts</p> <p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, J of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Spades: A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>
	<p>Fran's Hand: K of Clubs, Q of Diamonds, 9 of Diamonds, 10 of Clubs, Q of Clubs</p> <p>Gabriel's Hand: 9 of Clubs, K of Spades, 10 of Hearts, K of Hearts, Q of Hearts</p> <p>Edsger's Hand: A of Clubs, K of Diamonds, J of Clubs, J of Diamonds, A of Hearts</p> <p>Herb's Hand: 9 of Spades, A of Diamonds, Q of Spades, 9 of Hearts, 10 of Spades</p>
<p>King of Clubs led by Fran</p> <p>Nine of Clubs played by Gabriel</p> <p>Nine of Spades played by Herb</p> <p>Ace of Clubs played by Edsger</p> <p>Edsger takes the trick</p>	<p>Fran is left of dealer so leads highest non-trump card; led_suit = Clubs</p> <p>Gabriel has to follow suit so plays highest club</p> <p>Herb can't follow suit so plays lowest card</p> <p>Edsger has to follow suit so plays highest club</p> <p>No trump played so highest led_suit card wins, which is A of clubs</p>

Output	Explanation
	<p>Fran's Hand: Q of Diamonds, 9 of Diamonds, 10 of Clubs, Q of Clubs</p> <p>Gabriel's Hand: K of Spades, 10 of Hearts, K of Hearts, Q of Hearts</p> <p>Edsger's Hand: K of Diamonds, J of Clubs, J of Diamonds, A of Hearts</p> <p>Herb's Hand: A of Diamonds, Q of Spades, 9 of Hearts, 10 of Spades</p>
<p>King of Diamonds led by Edsger</p> <p>Queen of Diamonds played by Fran</p> <p>King of Spades played by Gabriel</p> <p>Ace of Diamonds played by Herb</p> <p>Herb takes the trick</p>	<p>Edsger won last trick so leads highest non-trump card; led_suit = Diamonds</p> <p>Fran has to follow suit so plays highest diamond</p> <p>Gabriel can't follow suit so plays lowest card; Hearts is trump making it higher than all cards in all other suits</p> <p>Herb has to follow suit so plays highest diamond</p> <p>No trump played so highest led_suit card wins, which is A of Diamonds</p>
	<p>Fran's Hand: 9 of Diamonds, 10 of Clubs, Q of Clubs</p> <p>Gabriel's Hand: 10 of Hearts, K of Hearts, Q of Hearts</p> <p>Edsger's Hand: J of Clubs, J of Diamonds, A of Hearts</p> <p>Herb's Hand: Q of Spades, 9 of Hearts, 10 of Spades</p>
<p>Queen of Spades led by Herb</p> <p>Jack of Clubs played by Edsger</p> <p>Nine of Diamonds played by Fran</p> <p>Ten of Hearts played by Gabriel</p> <p>Gabriel takes the trick</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = Spades</p> <p>Edsger can't follow suit so plays lowest card; J of Diamonds is left bower so a trump, making it higher than all cards in other suits</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel can't follow suit so plays lowest card</p> <p>Trump played so highest trump card wins, which is 10 of Hearts</p>
	<p>Fran's Hand: 10 of Clubs, Q of Clubs</p> <p>Gabriel's Hand: K of Hearts, Q of Hearts</p> <p>Edsger's Hand: J of Diamonds, A of Hearts</p> <p>Herb's Hand: 9 of Hearts, 10 of Spades</p>
<p>King of Hearts led by Gabriel</p>	<p>Gabriel won last trick so leads highest non-trump card; no non-trump card in hand so plays highest trump; led_suit =</p>



Output	Explanation
<p>Nine of Hearts played by Herb</p> <p>Jack of Diamonds played by Edsger</p> <p>Ten of Clubs played by Fran</p> <p>Edsger takes the trick</p>	<p>Hearts</p> <p>Herb has to follow suit so plays highest heart</p> <p>Edsger has to follow suit so plays highest heart; J of Diamonds is left bower so considered a Heart</p> <p>Fran can't follow suit so plays lowest card</p> <p>Trump played so highest trump card wins, which is J of Diamonds</p>
	<p>Fran's Hand: Q of Clubs</p> <p>Gabriel's Hand: Q of Hearts</p> <p>Edsger's Hand: A of Hearts</p> <p>Herb's Hand: 10 of Spades</p>
<p>Ace of Hearts led by Edsger</p> <p>Queen of Clubs played by Fran</p> <p>Queen of Hearts played by Gabriel</p> <p>Ten of Spades played by Herb</p> <p>Edsger takes the trick</p>	<p>Edsger won last trick so leads highest non-trump card; led_suit = Hearts</p> <p>Fran plays last card</p> <p>Gabriel plays last card</p> <p>Herb plays last card</p> <p>Trump played so highest trump card wins, which is A of Hearts</p>
<p>Edsger and Gabriel win the hand</p> <p>Edsger and Gabriel have 7 points</p> <p>Fran and Herb have 8 points</p>	<p>Attackers won 4 / 5 tricks so get 1 point</p>

## Hand 9

Output	Explanation
<p>Hand 9</p> <p>Fran deals</p> <p>Queen of Spades turned up</p> <p>Gabriel passes</p> <p>Herb passes</p>	<p>Attackers - Fran and Herb</p> <p>Defenders - Edsger and Gabriel</p> <p>Ranks of suit highest to low</p> <p>Spades: J of Spades, J of Clubs, A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p>

Output	Explanation
<p>Edsger passes</p> <p>Fran orders up Spades</p>	<p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, J of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Hearts: A of Hearts, K of Hearts, Q of Hearts, J of Hearts, 10 Hearts, 9 Hearts</p>
	<p>Fran's Hand: Q of Clubs, Q of Spades, J of Clubs, A of Spades, K of Spades</p> <p>Gabriel's Hand: A of Diamonds, K of Diamonds, 9 of Clubs, 10 of Clubs, Q of Diamonds</p> <p>Edsger's Hand: 9 of Diamonds, 10 of Hearts, J of Hearts, K of Clubs, A of Clubs</p> <p>Herb's Hand: J of Diamonds, 10 of Diamonds, Q of Hearts, K of Hearts, A of Hearts</p>
<p>Ace of Diamonds led by Gabriel</p> <p>Jack of Diamonds played by Herb</p> <p>Nine of Diamonds played by Edsger</p> <p>Queen of Clubs played by Fran</p> <p>Gabriel takes the trick</p>	<p>Gabriel is left of dealer so leads highest non-trump card; led_suit = Diamonds</p> <p>Herb has to follow suit so plays highest diamond</p> <p>Edsger has to follow suit so plays highest diamond</p> <p>Fran can't follow suit so plays lowest card</p> <p>No trump played so highest led_suit card wins, which is A of diamonds</p>
	<p>Fran's Hand: Q of Spades, J of Clubs, A of Spades, K of Spades</p> <p>Gabriel's Hand: K of Diamonds, 9 of Clubs, 10 of Clubs, Q of Diamonds</p> <p>Edsger's Hand: 10 of Hearts, J of Hearts, K of Clubs, A of Clubs</p> <p>Herb's Hand: 10 of Diamonds, Q of Hearts, K of Hearts, A of Hearts</p>
<p>King of Diamonds led by Gabriel</p> <p>Ten of Diamonds played by Herb</p> <p>Ten of Hearts played by</p>	<p>Gabriel won last trick so leads highest non-trump card; led_suit = Diamonds</p> <p>Herb has to follow suit so plays highest diamond</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran can't follow suit so plays lowest card; J of Clubs is left</p>

Output	Explanation
Edsger Queen of Spades played by Fran Fran takes the trick	bower so is higher than the Q Trump played so highest trump wins, which is Q of Spades
	Fran's Hand: J of Clubs, A of Spades, K of Spades Gabriel's Hand: 9 of Clubs, 10 of Clubs, Q of Diamonds Edsger's Hand: J of Hearts, K of Clubs, A of Clubs Herb's Hand: Q of Hearts, K of Hearts, A of Hearts
Jack of Clubs led by Fran Nine of Clubs played by Gabriel Queen of Hearts played by Herb Jack of Hearts played by Edsger Fran takes the trick	Fran won last trick so leads highest non-trump; no non-trump in hand so plays highest trump; led_suit = Spades Gabriel can't follow suit so plays lowest card Herb can't follow suit so plays lowest card Edsger can't follow suit so plays lowest card Trump played so highest trump wins, which is J of Clubs
	Fran's Hand: A of Spades, K of Spades Gabriel's Hand: 10 of Clubs, Q of Diamonds Edsger's Hand: K of Clubs, A of Clubs Herb's Hand: K of Hearts, A of Hearts
Ace of Spades led by Fran Ten of Clubs played by Gabriel King of Hearts played by Herb King of Clubs played by Edsger Fran takes the trick	Fran won last trick so leads highest non-trump; no non-trump in hand so plays highest trump; led_suit = Spades Gabriel can't follow suit so plays lowest card Herb can't follow suit so plays lowest card Edsger can't follow suit so plays lowest card Trump played so highest trump wins, which is A of Spades
	Fran's Hand: K of Spades Gabriel's Hand: Q of Diamonds Edsger's Hand: A of Clubs Herb's Hand: A of Hearts
King of Spades led by Fran Queen of Diamonds played by Gabriel	Fran won last trick so leads highest non-trump; no non-trump in hand so plays highest trump; led_suit = Spades Gabriel can't follow suit so plays lowest card

Output	Explanation
<p>Ace of Hearts played by Herb</p> <p>Ace of Clubs played by Edsger</p> <p>Fran takes the trick</p>	<p>Herb can't follow suit so plays lowest card</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Trump played so highest trump wins, which is K of Spades</p>
<p>Fran and Herb win the hand</p> <p>Edsger and Gabriel have 7 points</p> <p>Fran and Herb have 9 points</p>	<p>Attackers won 4 / 5 tricks so get 1 point</p>

## Hand 10

Output	Explanation
<p>Hand 10</p> <p>Gabriel deals</p> <p>Ace of Clubs turned up</p> <p>Herb passes</p> <p>Edsger passes</p> <p>Fran passes</p> <p>Gabriel passes</p> <p>Herb passes</p> <p>Edsger orders up Spades</p>	<p>Attackers - Edsger and Gabriel</p> <p>Defenders - Fran and Herb</p> <p>Ranks of suit highest to low</p> <p>Spades: J of Spades, J of Clubs, A of Spades, K of Spades, Q of Spades, J of Spades, 10 of Spades, 9 of Spades</p> <p>Diamonds: A of Diamonds, K of Diamonds, Q of Diamonds, J of Diamonds, 10 of Diamonds, 9 of Diamonds</p> <p>Clubs: A of Clubs, K of Clubs, Q of Clubs, 10 of Clubs, 9 of Clubs</p> <p>Hearts: A of Hearts, K of Hearts, Q of Hearts, J of Hearts, 10 Hearts, 9 Hearts</p>
	<p>Fran's Hand: K of Diamonds, 10 of Clubs, K of Hearts, A of Spades, J of Spades</p> <p>Gabriel's Hand: Q of Diamonds, 9 of Diamonds, Q of Hearts, 10 of Spades, K of Spades</p> <p>Edsger's Hand: 10 of Diamonds, 9 of Hearts, A of Hearts, Q of Spades, J of Clubs</p> <p>Herb's Hand: A of Diamonds, Q of Clubs, J of Diamonds, 10 of Hearts, 9 of Clubs</p>
<p>Ace of Diamonds led by Herb</p>	<p>Herb is left of dealer so leads highest non-trump card; led_suit = Diamonds</p>

Output	Explanation
<p>Ten of Diamonds played by Edsger</p> <p>King of Diamonds played by Fran</p> <p>Queen of Diamonds played by Gabriel</p> <p>Herb takes the trick</p>	<p>Edsger has to follow suit so plays highest diamond</p> <p>Fran has to follow suit so plays highest diamond</p> <p>Gabriel has to follow suit so plays highest diamond</p> <p>No trump played so highest led_suit card wins, which is A of Diamonds</p>
	<p>Fran's Hand: 10 of Clubs, K of Hearts, A of Spades, J of Spades</p> <p>Gabriel's Hand: 9 of Diamonds, Q of Hearts, 10 of Spades, K of Spades</p> <p>Edsger's Hand: 9 of Hearts, A of Hearts, Q of Spades, J of Clubs</p> <p>Herb's Hand: Q of Clubs, J of Diamonds, 10 of Hearts, 9 of Clubs</p>
<p>Queen of Clubs led by Herb</p> <p>Nine of Hearts played by Edsger</p> <p>Ten of Clubs played by Fran</p> <p>Nine of Diamonds played by Gabriel</p> <p>Herb takes the trick</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = clubs</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran has to follow suit so plays highest club</p> <p>Gabriel can't follow suit so plays lowest card</p> <p>No trump played so highest led_suit card wins, which is Q of Clubs</p>
	<p>Fran's Hand: K of Hearts, A of Spades, J of Spades</p> <p>Gabriel's Hand: Q of Hearts, 10 of Spades, K of Spades</p> <p>Edsger's Hand: A of Hearts, Q of Spades, J of Clubs</p> <p>Herb's Hand: J of Diamonds, 10 of Hearts, 9 of Clubs</p>
<p>Jack of Diamonds led by Herb</p> <p>Ace of Hearts played by Edsger</p> <p>King of Hearts played by Fran</p> <p>Queen of Hearts played by Gabriel</p> <p>Herb takes the trick</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = clubs</p> <p>Edsger can't follow suit so plays lowest card; Spades is trump making it higher than all cards in all other suits; J of Clubs is left bower so is considered a Spade</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel can't follow suit so plays lowest card</p> <p>No trump played so highest led_suit card wins, which is Q of Clubs</p>

Output	Explanation
	<p>Fran's Hand: A of Spades, J of Spades</p> <p>Gabriel's Hand: 10 of Spades, K of Spades</p> <p>Edsger's Hand: Q of Spades, J of Clubs</p> <p>Herb's Hand: 10 of Hearts, 9 of Clubs</p>
<p>Ten of Hearts led by Herb</p> <p>Queen of Spades played by Edsger</p> <p>Ace of Spades played by Fran</p> <p>Ten of Spades played by Gabriel</p> <p>Fran takes the trick</p>	<p>Herb won last trick so leads highest non-trump card; led_suit = hearts</p> <p>Edsger can't follow suit so plays lowest card</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel can't follow suit so plays lowest card</p> <p>Trump played so highest trump card wins, which is A of Spades</p>
	<p>Fran's Hand: J of Spades</p> <p>Gabriel's Hand: K of Spades</p> <p>Edsger's Hand: J of Clubs</p> <p>Herb's Hand: 9 of Clubs</p>
<p>Jack of Spades led by Fran</p> <p>King of Spades played by Gabriel</p> <p>Nine of Clubs played by Herb</p> <p>Jack of Clubs played by Edsger</p> <p>Fran takes the trick</p>	<p>Fran won last trick so leads highest non-trump card; led_suit = Spades</p> <p>Edsger has to follow suit so plays highest spade</p> <p>Fran can't follow suit so plays lowest card</p> <p>Gabriel has to follow suit so plays highest spade</p> <p>Trump played so highest trump card wins, which is A of Spades</p>
<p>Fran and Herb win the hand euchred!</p> <p>Edsger and Gabriel have 7 points</p> <p>Fran and Herb have 11 points</p> <p>Fran and Herb win!</p>	<p>Defenders won 5 / 5 so got 2 points</p>