4	5	2	5	5	2
3	5	4	4	3	6
6	1	6	5	6	6
3	1	6	2	1	1
6	5	3	2	5	4
4	3	4	4	4	6
6	5	4	4	3	1
3	2	2	5	1	2

1	5	2	4	1	1
6	4	2	5	5	1
1	1	5	5	2	5
1	3	4	5	5	4
5	3	1	3	3	1
1	3	3	6	2	2
2	4	3	4	5	6
1	6	3	5	6	4

5	1	3	6	2	2
3	1	1	3	5	5
5	6	4	2	4	2
3	2	2	3	2	5
2	4	1	5	3	5
6	2	2	3	2	3
5	3	4	3	1	2
1	5	5	1	4	6

2	5	1	6	2	1
6	2	6	2	1	6
5	4	5	2	3	3
5	1	5	1	3	4
2	2	4	3	2	2
4	3	5	5	2	1
4	4	2	1	2	3
2	1	2	5	3	6

HARDWARE HUSTLE

prototype_draft_9cc636f_240228

RULES

INTRODUCTION

Hardware Hustle is a tabletop, roll-and-write resource management game about sustainably running an indie electronics business.

Buy, make, sell, and research your way to profit without burning out!

For one or more players. Ages 10+.
~20min to play.

GAME OVERVIEW

You have six turns to buy parts to make widgets, make widgets from parts, sell widgets for money to buy more parts, and so on.

Each of those phases use opportunity (⊙), which depletes as the game progresses and is limited per-phase by a die roll. At the end of each turn, use renaming ⊙ to attempt a research upgrade to reduce future ⊙ costs.

The six turns are miniature spreadsheets, and the game ends when they're all filled out. The player with the most money at the end wins.

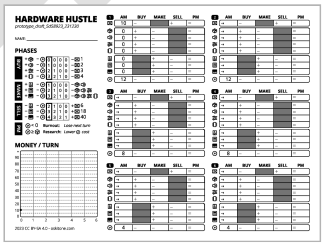
COMPONENTS

Each player will need:

- Hardware Hustle game sheet
- Six-sided die or "Roll Table" page in rules (see *Appendix* for usage)
- Calculator or scratch paper for math (optional)

GAME SETUP

Fill out the "Name" line in the top left of the game sheet, then familiarize yourself with the rest of its layout: Phases table, Money/Turn graph, and six turn spreadsheets.



There is no player order, game sheets are filled out simultaneously, and die rolls can be done by any player.

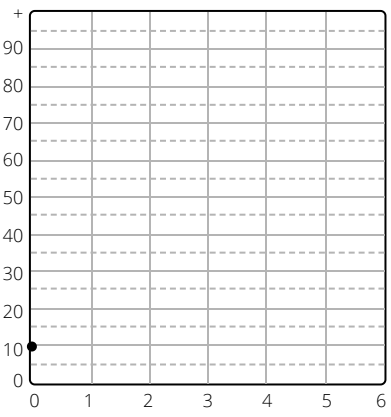
DRAFT

HARDWARE HUSTLE

PHASES

BUY	+ 📦	− ⊙	0	0	0	0	− 💰	1
	+ 🔊	− ⊙	1	0	0	0	− 💰	2
	+ 🎛	− ⊙	2	1	0	0	− 💰	3
	+ 🔲	− ⊙	3	2	1	0	− 💰	4
MAKE	+ 🖥	− ⊙	1	0	0	0	− 📦 🔊	
	+ 🧮	− ⊙	2	1	0	0	− 📦 🔊 🎛	
	+ 🎹	− ⊙	3	2	1	0	− 📦 🔊 🎛 🔲	
SELL	− 🖥	− ⊙	2	1	0	0	+ 💰	6
	− 🧮	− ⊙	3	2	1	0	+ 💰	18
	− 🎹	− ⊙	4	3	2	1	+ 💰	40
PM	⊙ ≥ 📦	**Research:** *Lower ⊙ cost*						
	⊙ < 0	**Burnout:** *Lose next turn*						

MONEY / TURN



1	AM	BUY	MAKE
💰	10	–	
📦	0	+	–
🔊	0	+	–
🎛	0	+	–
🔲	0	+	–
🖥	0		+
🧮	0		+
🎹	0		+
⊙	12	–	–

3	AM	BUY	MAKE
💰	⇢	–	
📦	⇢	+	–
🔊	⇢	+	–
🎛	⇢	+	–
🔲	⇢	+	–
🖥	⇢		+
🧮	⇢		+
🎹	⇢		+
⊙	8	–	–

5	AM	BUY	MAKE
💰	⇢	–	
📦	⇢	+	–
🔊	⇢	+	–
🎛	⇢	+	–
🔲	⇢	+	–
🖥	⇢		+
🧮	⇢		+
🎹	⇢		+
⊙	4	–	–

To complete the Buy phase:

1. **Roll:**
   - Roll a die. Its value is the *maximum* ⊙ that each player can spend buying this turn.
   - Based on the max ⊙ that was just rolled and how much 💰 you have in the AM column, decide which parts to buy.
2. **Write:**
   - In the Buy column, write the values for the total 💰 cost, the parts you bought, and the total ⊙ they used.

Notes:

- The value of the ⊙ roll is shared by all players, and everyone fills in their game sheets simultaneously.
- You can buy as many or as few parts as you want and even multiples of the same part, as long as you have the required ⊙ and 💰. (The sum ⊙ must be less than or equal to your roll, and the sum 💰 must be less than or equal to what you have in the AM column.)
- You can also choose to buy nothing and skip this phase, though that's a gutsy move on your first turn!
- Cells are prefixed by their mathematical operation. You're losing 💰 and ⊙, so those cells have a –. You're gaining parts, so they have a +. The same –/+ signs are in the Phases table.
- Unused cells have a gray background to mark they're skipped.
- Cells with no change can be crossed out or filled with 0.
- You can spend less ⊙ than you roll, but you can't spend more. You also can't spend more 💰 than you have available.
- Don't move on to the next phase until all players have completed the current one.

3. MAKE

Now you'll use the parts you bought to make widgets you can sell.

The Phases table lists the widgets you can make, their outlined ⊙ costs, and the parts they'll use:

MAKE	+ 🖥	− ⊙	1	0	0	0	− 📦 🔊	
	+ 🧮	− ⊙	2	1	0	0	− 📦 🔊 🎛	
	+ 🎹	− ⊙	3	2	1	0	− 📦 🔊 🎛 🔲	

To complete the Make phase:

1. **Roll:**
   - Roll a die. Its value is the *maximum* ⊙ that each player can spend making this turn.
   - Based on the max ⊙ that was just rolled and which parts you have available, decide which widgets to make.

HOW TO PLAY

The spreadsheets' rows are grouped into money (📷), parts (📦 🔊 🎛 📳), widgets (🎙 🧮 🎹), and opportunity (↗).

And their five columns are phases that you fill out from left to right during your turn.

1. **AM**
   Take stock of what you have and need
2. **BUY**
   Buy parts (📦 🔊 🎛 📳) using 📷 and ↗
3. **MAKE**
   Make widgets (🎙 🧮 🎹) using parts and ↗
4. **SELL**
   Sell widgets for 📷 using ↗
5. **PM**
   Use remaining ↗ to research or lose next turn if ↗ is negative

(Refer to the *Appendix*'s *Example First Turn* for a glimpse of everything in action and an *Icon Glossary* that says what the icons are called.)

1. AM

You begin each turn by taking stock of what you have and need at the beginning of the day.

For the game's first turn, there's nothing to do here besides note the starting pre-filled values. You have 📷×10 and ↗×12... and you need basically everything else.

(Later turns will have empty cells to fill out, but there still won't be any decision-making or die-rolling. For those reasons, AM is not listed in the Phases table on the left of your game sheet.)

2. BUY

Before you can make any money (📷) selling widgets, you've got to spend money buying their parts.

Parts cost 📷 and ↗, as listed in the Phases table:

BUY	+ 📦	+ 🔊	+ 🎛	+ 📳	− ↗	− 📷
	0	0	0	0	0	1
	1	0	0	0	0	2
	2	1	0	0	0	3
	3	2	1	0	0	4

The ↗ costs are a table of values, but, for all the phases of your first turn, you'll only use the ones in the leftmost column with the dark outline.

For example, to buy a 📦, you need ↗×0 and 📷×1; to buy a 🔊 you need ↗×1 and 📷×2; etc. You'll revisit ↗ costs in the PM phase a little later.

SELL	PM
+	=
	=
	=
	=
	=
−	=
−	=
−	=
−	=

2	AM	BUY	MAKE	SELL	PM
📷	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
📳	⇢	+	−		=
🎙	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	12	−	−	−	=

4	AM	BUY	MAKE	SELL	PM
📷	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
📳	⇢	+	−		=
🎙	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	8	−	−	−	=

6	AM	BUY	MAKE	SELL	PM
📷	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
📳	⇢	+	−		=
🎙	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	4	−	−	−	=

2. **Write:**
   - In the Make column, write the values for the parts you used, the widgets you made, and the total ↗ they used.

You can make as many or as few widgets as you want, provided you have the required parts and ↗. In later turns, you can use parts purchased in previous turns.

4. SELL

If you made any widgets, now's a fine time to sell them so you have 📷 for your next turn's Buy phase.

Notice how the Phases table for Sell has you losing widgets but gaining 📷:

SELL	− 🎙	− 🧮	− 🎹	− ↗	+ 📷
	2	1	0	0	6
	3	2	1	0	18
	4	3	2	1	40

To complete the Sell phase:

1. **Roll:**
   - Roll a die. Its value is the *maximum* ↗ that each player can spend selling this turn.
   - Based on the max ↗ that was just rolled and which widgets you have available, decide which widgets to sell.
2. **Write:**
   - In the Sell column, write the values for the 📷 you made, the widgets you sold, and the total ↗ they used.

Sell as many or as few widgets as you want, provided you have the required widgets and ↗. In later turns, you can sell widgets made in previous turns.

5. PM

Whew! It's time to wrap up the workday and end your turn.

To complete the PM phase:

1. **Roll:**
   - Roll a die. Its value is the *minimum* ↗ you need remaining to upgrade *one* of the previous three phases' actions. See below for more info.
2. **Write:**
   - Tally each row's equation into the final column prefixed with =.
   - If your remaining ↗ is negative, you suffer **burnout** and cross out the entire next turn to rest. Again, see below for more info.

The Phases table summarizes PM's ↗ resolution:

PM			
	↗ ≥ 📦	**Research:**	*Lower ↗ cost*
	↗ < 0	**Burnout:**	*Lose next turn*

RESEARCH UPGRADE

Remember how you've only been using the Phase table's first column of ↗

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SELL	PM
+	=
	=
	=
	=
	=
−	=
−	=
−	=
−	=

2	AM	BUY	MAKE	SELL	PM
📷	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
📳	⇢	+	−		=
🎙	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	12	−	−	−	=

4	AM	BUY	MAKE	SELL	PM
📷	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
📳	⇢	+	−		=
🎙	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	8	−	−	−	=

6	AM	BUY	MAKE	SELL	PM
📷	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
📳	⇢	+	−		=
🎙	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	4	−	−	−	=

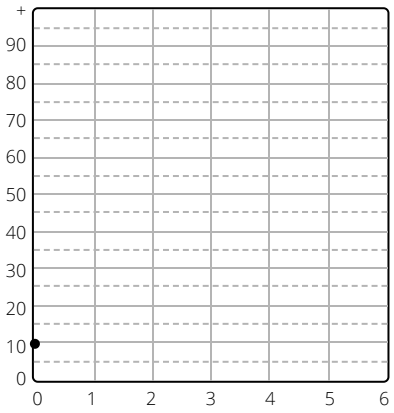
HARDWARE HUSTLE

PHASES

BUY	+	−	0	0	0	0	− 1
	+	−	1	0	0	0	− 2
	+	−	2	1	0	0	− 3
	+	−	3	2	1	0	− 4
MAKE	+	−	1	0	0	0	−
	+	−	2	1	0	0	−
	+	−	3	2	1	0	−
SELL	−	−	2	1	0	0	+ 6
	−	−	3	2	1	0	+ 18
	−	−	4	3	2	1	+ 40

PM — ≥ : **Research:** *Lower cost*; < 0 : **Burnout:** *Lose next turn*

MONEY / TURN



1	AM	BUY	MAKE
	10	–	
	0	+	–
	0	+	–
	0	+	–
	0	+	–
	0		+
	0		+
	0		+
	12	–	–

3	AM	BUY	MAKE
	⇢	–	
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢		+
	⇢		+
	⇢		+
	8	–	–

5	AM	BUY	MAKE
	⇢	–	
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢		+
	⇢		+
	⇢		+
	4	–	–

values with the dark outline? Here's where that can change.

If your remaining is greater than or equal to your roll, your research attempt succeeded. Circle the PM column's cell to mark its success; otherwise cross it out for failure:

Success: =5 Failure: =2

Then, if successful, choose *one* phase action (Buy, Make, or Sell) to spend it on, shade in its outlined column, and then outline the next values to its right.

As an example, here's what a successful research upgrade to Make would look like when done:

BUY	+	−	0	0	0	0	− 1
	+	−	1	0	0	0	− 2
	+	−	2	1	0	0	− 3
	+	−	3	2	1	0	− 4
MAKE	+	−	1	0	0	0	−
	+	−	2	1	0	0	−
	+	−	3	2	1	0	−
SELL	−	−	2	1	0	0	+ 6
	−	−	3	2	1	0	+ 18
	−	−	4	3	2	1	+ 40

PM — ≥ : **Research:** *Lower cost*; < 0 : **Burnout:** *Lose next turn*

Everything in Make is now ×1 cheaper. The non-researched action's costs in Buy and Sell remain unchanged.

Notes:

- Just like in Buy/Make/Sell, the value in PM's roll for research upgrade is shared by all players.
- Its usage, however, is different from the other phases. For Buy/Make/Sell, it's a maximum that you want to roll high; for research, it's a minimum that you want to roll low.
- Because you can't roll higher than six, ending a turn with ×6 or higher means your research attempt automatically wins.
- Subsequent research upgrades on the same phase action work the same way. Each phase action can be upgraded three times.

BURNOUT

You spent more than you had available at the start of the turn? Now you have to spend the whole next day recuperating. Hope it was worth it.

Cross out the entire next turn's spreadsheet. You cannot do any of its phases.

ENDING A TURN

Mark a dot on the "Money/Turn" graph at your new total, then draw a line connecting it to the previous dot.

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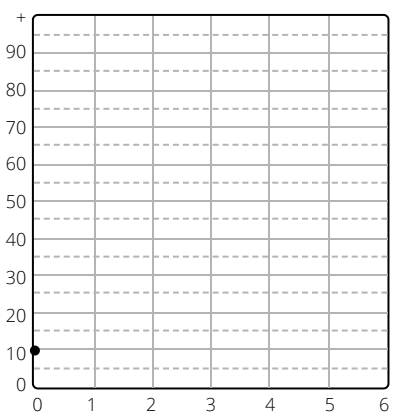
HARDWARE HUSTLE

PHASES

BUY	+	−	0	0	0	0	− 1
	+	−	1	0	0	0	− 2
	+	−	2	1	0	0	− 3
	+	−	3	2	1	0	− 4
MAKE	+	−	1	0	0	0	−
	+	−	2	1	0	0	−
	+	−	3	2	1	0	−
SELL	−	−	2	1	0	0	+ 6
	−	−	3	2	1	0	+ 18
	−	−	4	3	2	1	+ 40

PM — ≥ : **Research:** *Lower cost*; < 0 : **Burnout:** *Lose next turn*

MONEY / TURN



1	AM	BUY	MAKE
	10	–	
	0	+	–
	0	+	–
	0	+	–
	0	+	–
	0		+
	0		+
	0		+
	12	–	–

3	AM	BUY	MAKE
	⇢	–	
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢		+
	⇢		+
	⇢		+
	8	–	–

5	AM	BUY	MAKE
	⇢	–	
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢	+	–
	⇢		+
	⇢		+
	⇢		+
	4	–	–

research upgrade, needed to be greater than or equal to the .

Not a super profitable turn, but it ended with a spare part for later and a successful research upgrade. Could've been a lot worse!

ICON GLOSSARY

PARTS

Enclosure Speaker Controls Processor

WIDGETS

Amplifier Noisebox Synth

OTHER

Money Opportunity Roll

ROLL TABLE USAGE

The rule book's back page is a 2x2 table of 6x8 randomly generated values.

To use it as a substitute for rolling physical dice, close your eyes and drop a twirling fingertip or non-marking utensil on it. The touched value is your "roll." If the value is obscured, adopt the next readable value being pointed at.

To increase randomness, alternate sections of the table on each use.

CREDITS & FEEDBACK

Hardware Hustle was designed by Oskitone, maker of DIY electronic musical instruments and soldering kits. Please consider buying your next synthesizer project from oskitone.com.

This game is published under a CC BY-SA 4.0 license and is in open beta testing. Find its source code and playtesting feedback form at github.com/oskitone/hardware_hustle

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Don't move on to the next turn until all players have completed the current one.

STARTING A NEW TURN

The values in the PM column carry over to the empty cells in the next turn's AM column, as denoted by the ⇢ prefix.

The ↗ cells, however, are *not* empty; you have to use the values provided.

For skipped turns, fill the ⇢ AM cells on the next playable turn from the PM cells in the previously played turn.

END OF THE GAME

The game ends when all six turn spreadsheets are filled out. The player with the most money wins. Unused parts and unsold widgets count for nothing, only money.

In the case of a tie, the player with the fewest burnouts wins. For further ties, players share victory.

SOLO MODE

Solo play is solitaire. Try to beat your best score.

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APPENDIX

EXAMPLE FIRST TURN

1	AM	BUY	MAKE	SELL	PM
💵	10	− 5		+ 6	= 11
📦	0	+ 1	− 1		= 0
🔊	0	+ 2	− 1		= 1
🎛	0	+ 0	− 0		= 0
🔲	0	+ 0	− 0		= 0
🔘	0		+ 1	− 1	= 0
🧮	0		+ 0	− 0	= 0
🎹	0		+ 0	− 0	= 0
↗	12	− 2	− 1	− 2	= 8

1. **AM**
   Started the turn with 💵×10 and ↗×12.
2. **BUY**
   Rolled 📦×4. Spent 💵×5 to buy 📦×1 and 🔊×2 parts, using ↗×2.
3. **MAKE**
   Rolled 📦×1. Used 📦×1 and 🔊×1 parts to make 🔘×1 widget, using ↗×1.
4. **SELL**
   Rolled 📦×3. Got paid 💵×6 by selling 🔘×1 widget, using ↗×2
5. **PM**
   Rolled 📦×6. Ended with 💵×11, 🔊×1, and ↗×8, which was more than enough for the research upgrade of the 📦×6 roll.

For Buy/Make/Sell, ↗ usage was less than or equal to the 📦. For PM's

SELL	PM
+	=
	=
	=
	=
	=
−	=
−	=
−	=
−	=

2	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	12	−	−	−	=

SELL	PM
+	=
	=
	=
	=
	=
−	=
−	=
−	=
−	=

4	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	8	−	−	−	=

SELL	PM
+	=
	=
	=
	=
	=
−	=
−	=
−	=
−	=

6	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	4	−	−	−	=

HARDWARE HUSTLE

PHASES

BUY

+ 📦	− ↗	0	0	0	0	− 💵 1
+ 🔊	− ↗	1	0	0	0	− 💵 2
+ 🎛	− ↗	2	1	0	0	− 💵 3
+ 🔲	− ↗	3	2	1	0	− 💵 4

MAKE

+ 🔘	− ↗	1	0	0	0	− 📦 🔊
+ 🧮	− ↗	2	1	0	0	− 📦 🔊 🎛
+ 🎹	− ↗	3	2	1	0	− 📦 🔊 🎛 🔲

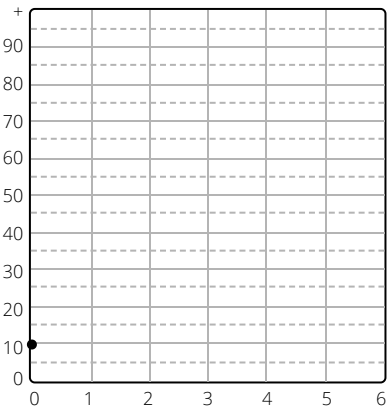
SELL

− 🔘	− ↗	2	1	0	0	+ 💵 6
− 🧮	− ↗	3	2	1	0	+ 💵 18
− 🎹	− ↗	4	3	2	1	+ 💵 40

PM

↗ ≥ 📦 **Research:** *Lower ↗ cost*
↗ < 0 **Burnout:** *Lose next turn*

MONEY / TURN



1	AM	BUY	MAKE	SELL	PM
💵	10	−		+	=
📦	0	+	−		=
🔊	0	+	−		=
🎛	0	+	−		=
🔲	0	+	−		=
🔘	0		+	−	=
🧮	0		+	−	=
🎹	0		+	−	=
↗	12	−	−	−	=

2	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	12	−	−	−	=

3	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	8	−	−	−	=

4	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	8	−	−	−	=

5	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	4	−	−	−	=

6	AM	BUY	MAKE	SELL	PM
💵	⇢	−		+	=
📦	⇢	+	−		=
🔊	⇢	+	−		=
🎛	⇢	+	−		=
🔲	⇢	+	−		=
🔘	⇢		+	−	=
🧮	⇢		+	−	=
🎹	⇢		+	−	=
↗	4	−	−	−	=