



MANUAL ARDUINO CONTROLE DE FORNO

DESCRIÇÃO

Por meio de um módulo de termopar tipo K, o arduino grava os dados de Tempo (1/2 Segundo) e Temperatura (°C) dentro de um arquivo .CSV em um Cartão Micro SD. Com objetivo de acelerar o processo de captação de dados e geração de curvas de Resfriamento e Aquecimento.

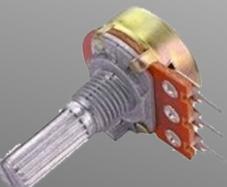
COMPONENTES



1x DISPLAY LCD 16x2



34x JUMPERS MACHO-MACHO



1x POTENCIÔMETRO



1x LED



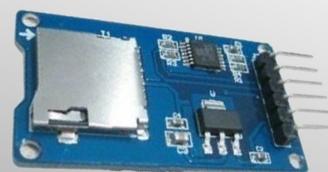
2x RESISTORES 300 ohms



1x CHAVE TÁCTIL

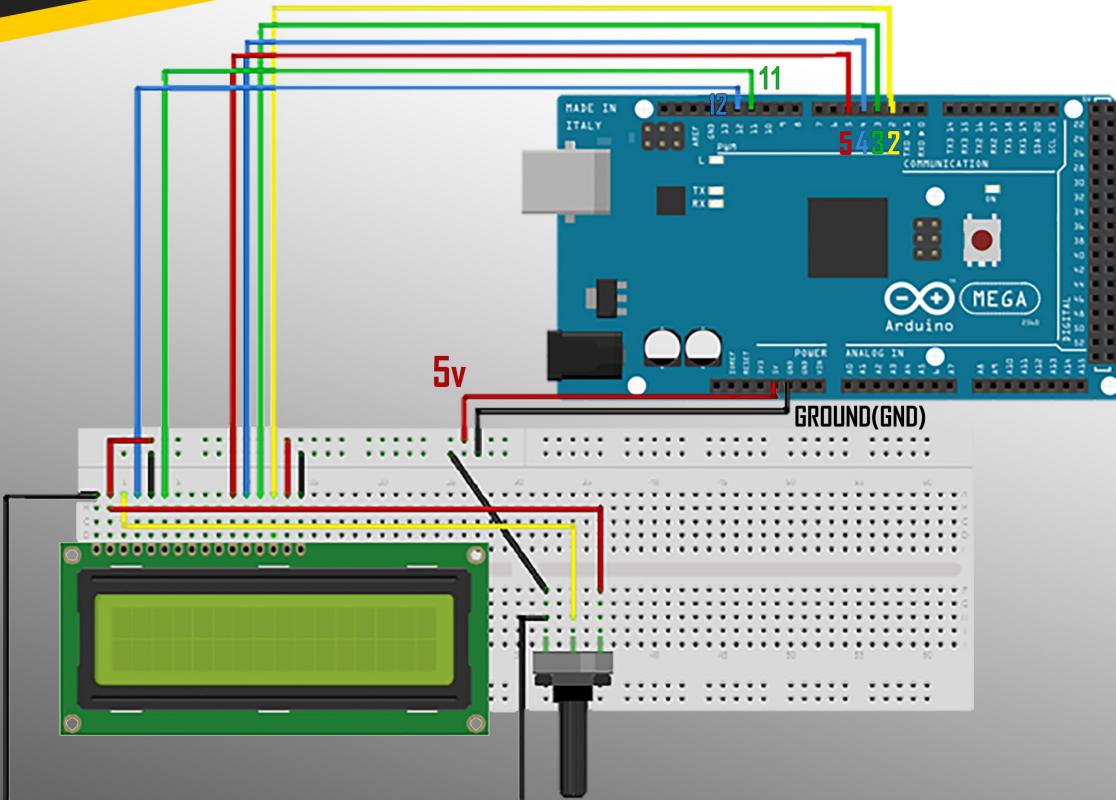


1x MÓDULO DE TERMOPAR



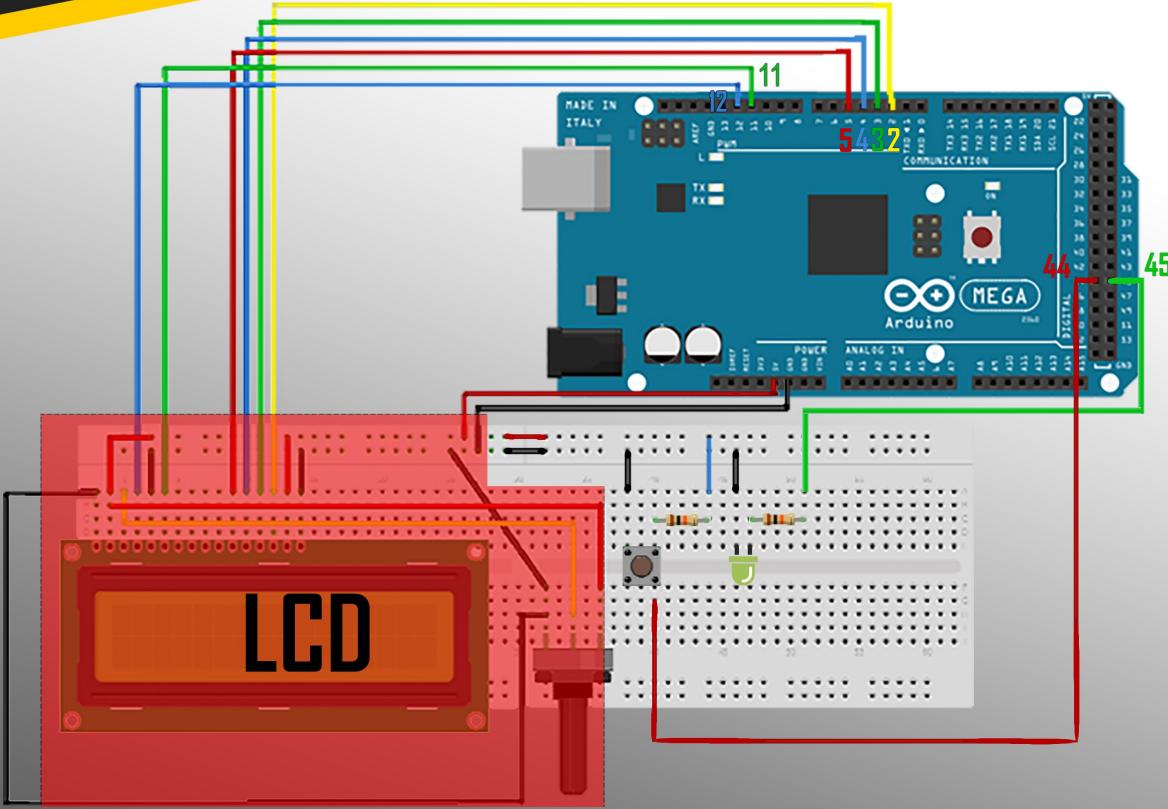
1x MÓDULO SD CARD

L C D

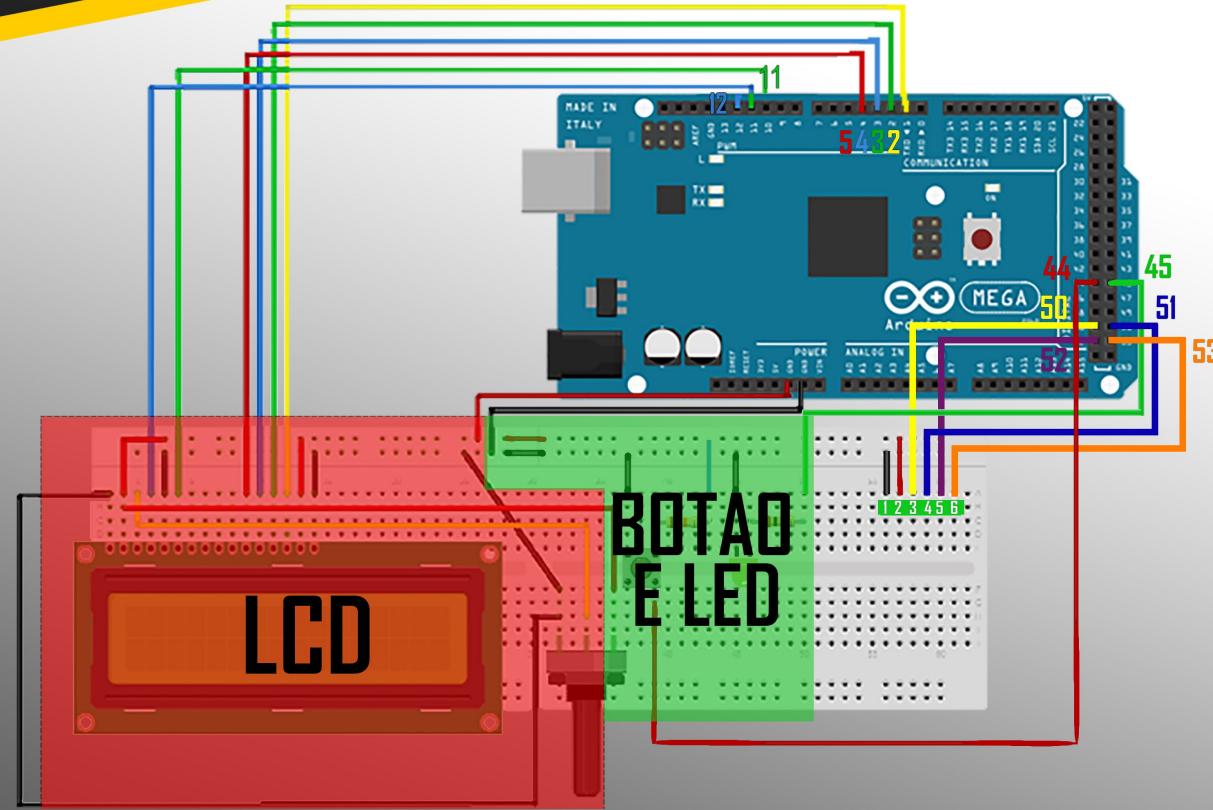


1	Vss	GROUND(GND)
2	Vdd	5v
3	V0 (Ajuste de Contraste)	PINO POTENCIOMETRO
4	RS	12
5	R/W (Leitura/Escrita)	GROUND(GND)
6	Enable (Habilita escrita no LCD)	11
7	DB0	-
8	DB1	-
9	DB2	-
10	DB3	-
11	DB4	5
12	DB5	4
13	DB6	3
14	DB7	2
15	Anodo - Luz de Fundo	5v
16	Catodo - Luz de Fundo	GROUND(GND)

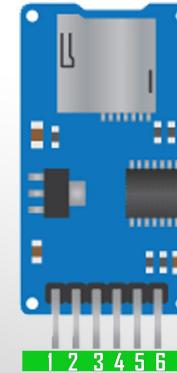
LED / BOTÃO



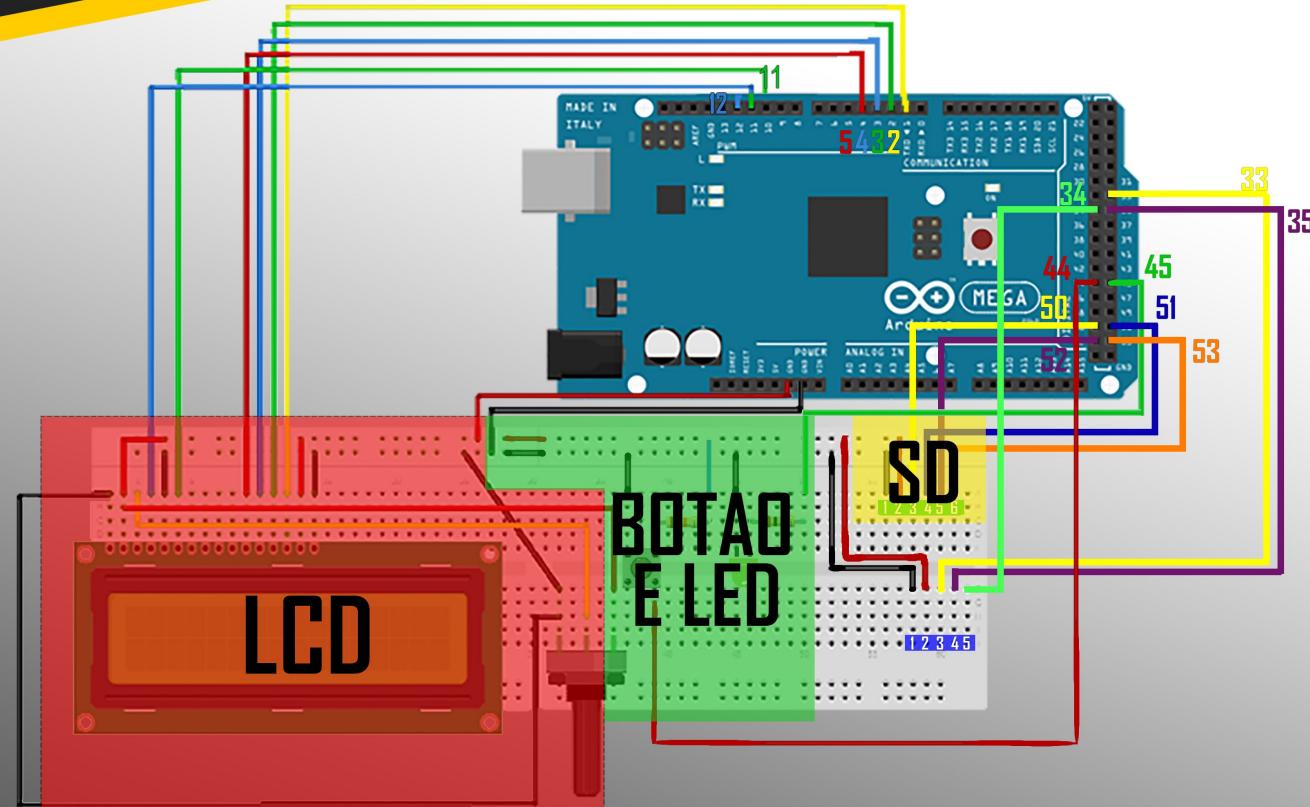
MÓDULO SD



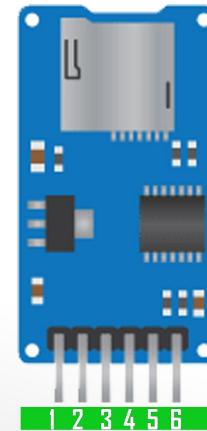
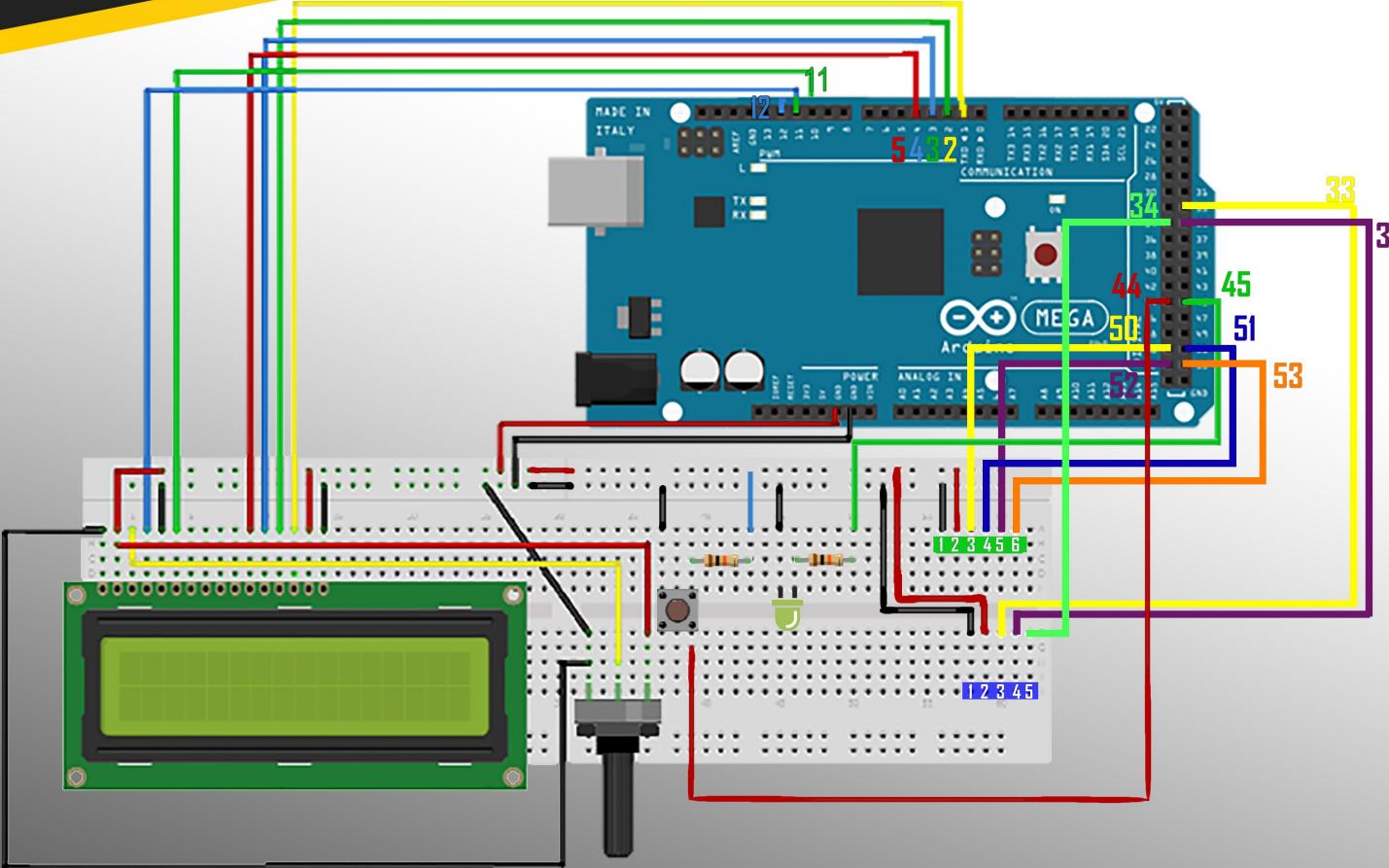
	MOSI	MISO	SCK	CS
Arduino Mega	51	50	52	53
Arduino Uno	11	12	13	10



MÓDULO TERMO PAR



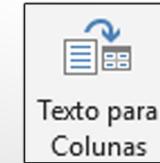
MONTAGEM FINAL



EXPORTANDO P/ EXCEL

-Com o SD conectado no Computador

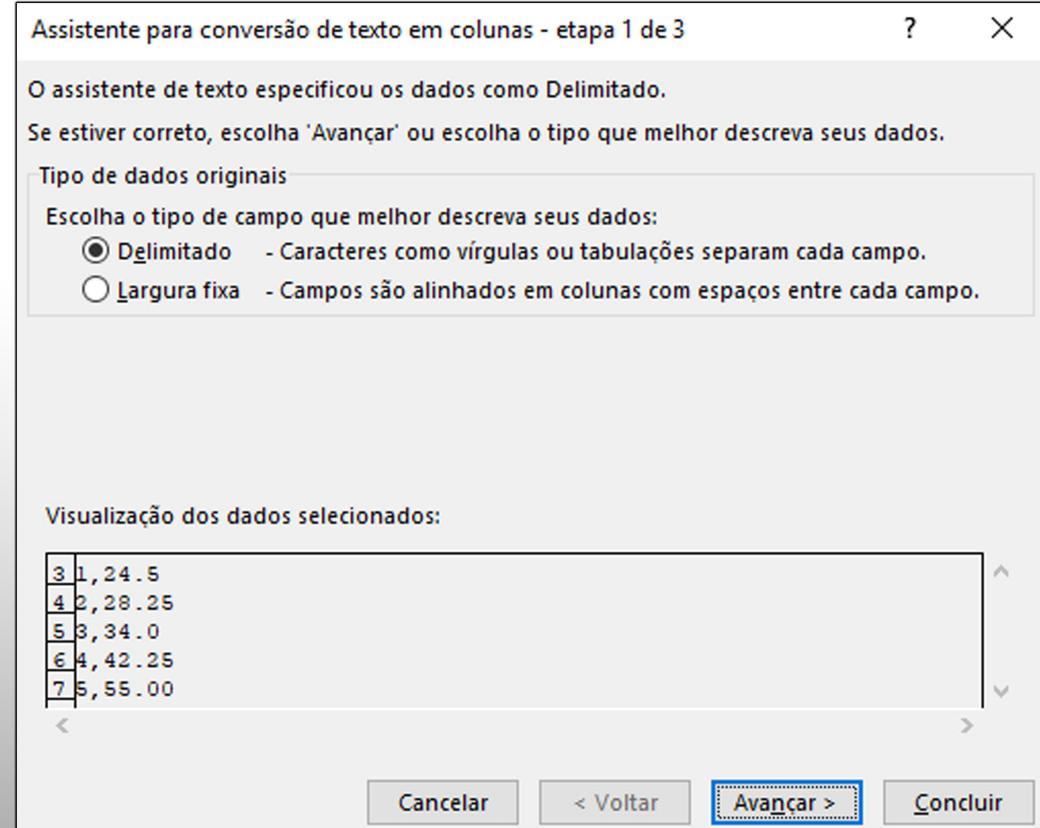
1. Abrir arquivo Dados.CSV
2. Selecionar toda a coluna principal
3. Na barra de menu: Dados>Texto Para Colunas



EXPORTANDO P/ EXCEL

4.1 ETAPA 1

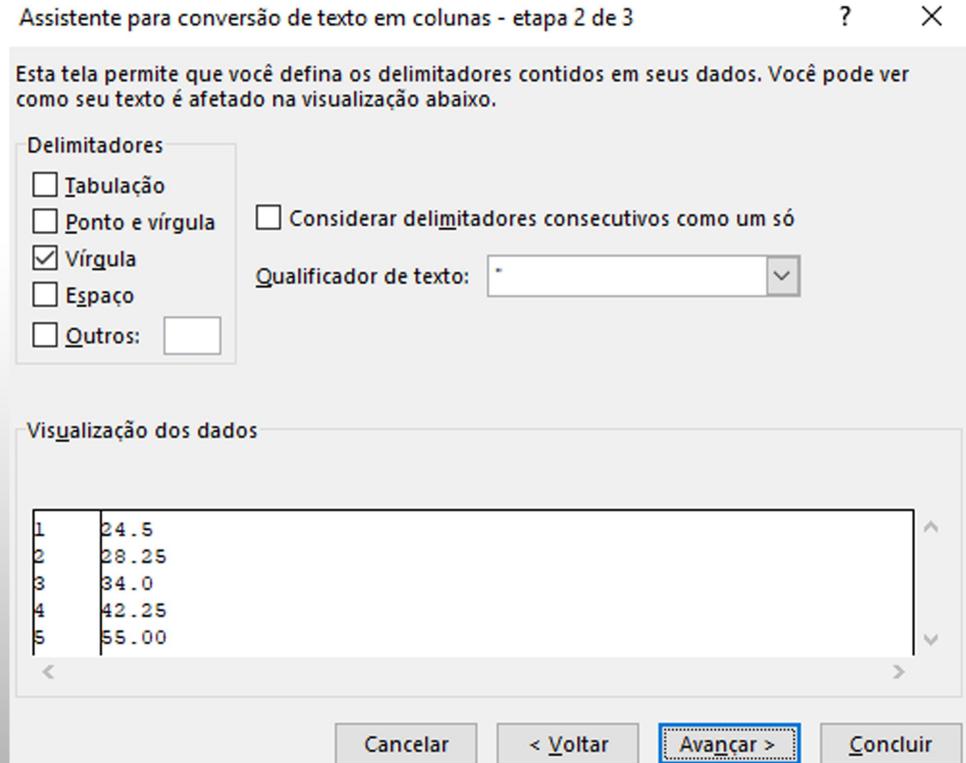
- “Delimitado” marcado
- Clique “Avançar”



EXPORTANDO P/ EXCEL

4.2 ETAPA 2

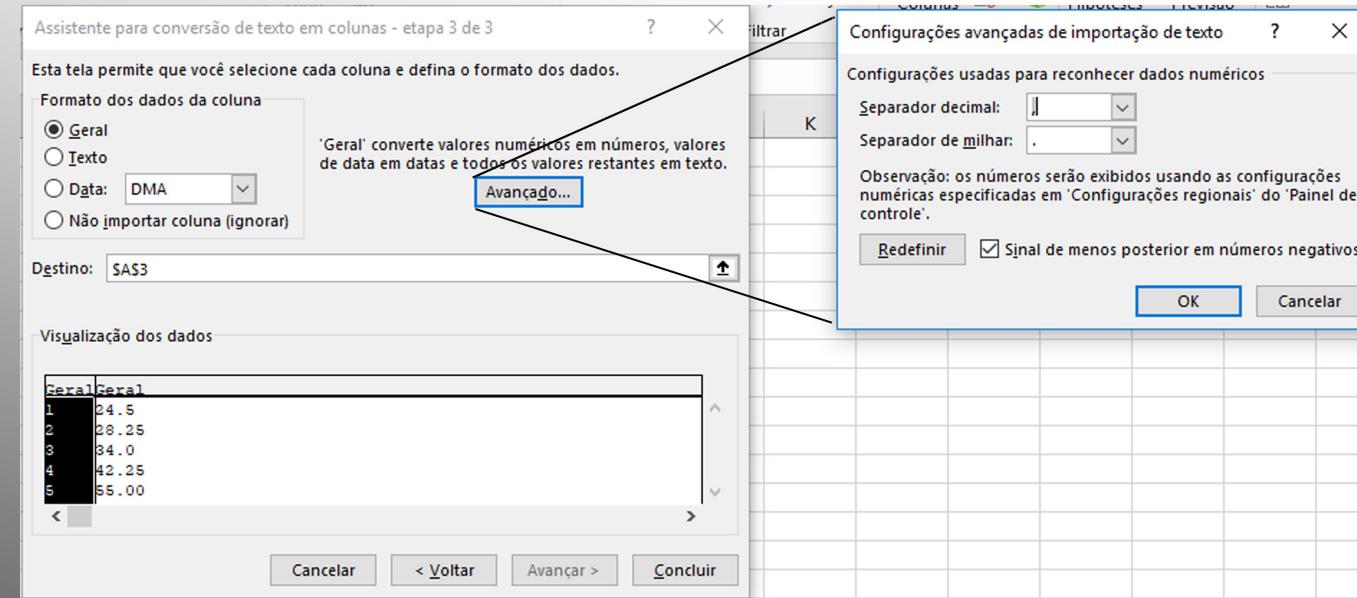
- Desmarcar “Tabulação”
- Marcar “Vírgula”
- Avançar



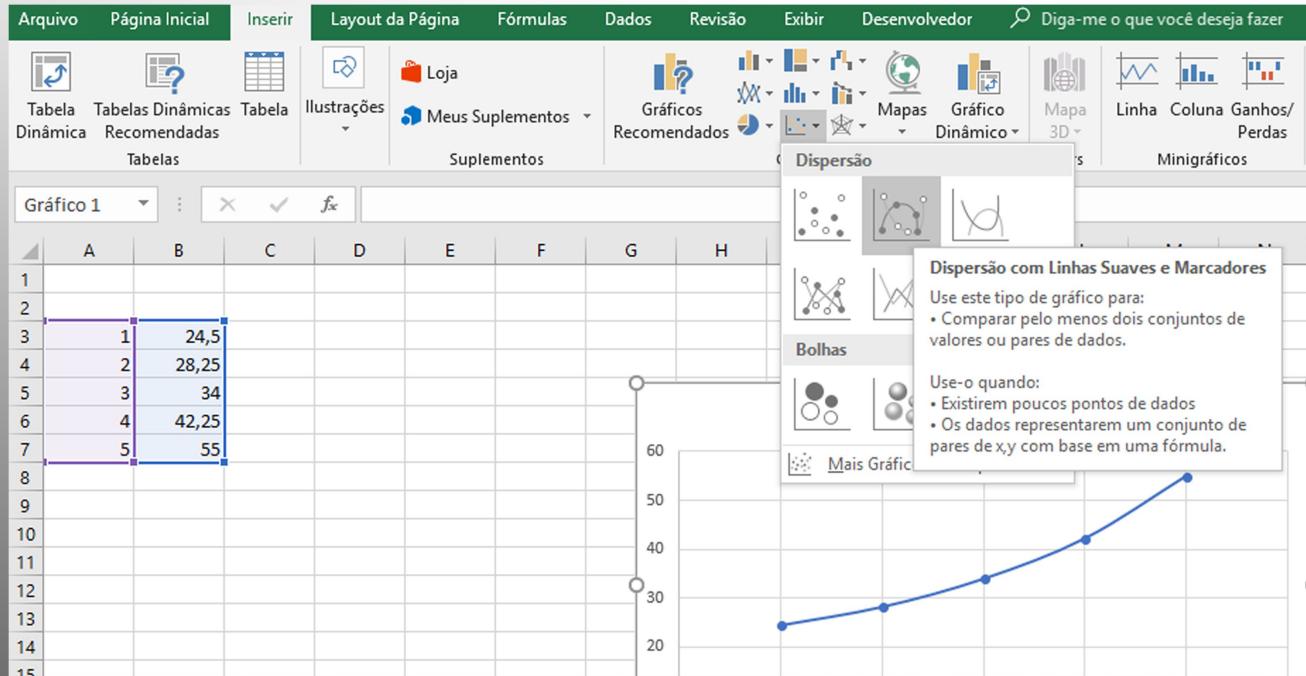
EXPORTANDO P/ EXCEL

4.3 ETAPA 3

- Clicar em “Avançado”
- Em “Separador decimal”
substituir “,”(vírgula) por “.”
(ponto)
- OK e Concluir



EXPORTANDO P/ EXCEL



5.

- Selecionar as Linhas de interesse
- Inserir > Dipersão > ...