

Curso: 5B

Grupo: 6

Nombres: Zafiro Alvarez, Lucas Ponce y Matias Chaiman

por-Pistas de 1mm

-Separación 1 mm entre el polígono y las pista.

-Agujeros de sujeción

-La unión del polígono debe ser sólida.

Se debe colocar además del esquemático 2 borneras. Una bornera en la entrada Vin gnd y en la salida Vout y gnd.

Ejercicio 1:

Este es el datasheet de la fuente switching.: [Datasheet LM2575-5](#)

[Datasheet electroliticos](#)

C1:

Selector de huellas (14469 elementos cargados)

Filtro

Apply footprint filters (CP_*)
 Filter by pin count (2)

Elemento	Descripción
CP_Radial_D4.0mm_P2.00mm	CP, Radial s
CP_Radial_D5.0mm_P2.00mm	CP, Radial s
CP_Radial_D5.0mm_P2.50mm	CP, Radial s
CP_Radial_D6.3mm_P2.50mm	CP, Radial s
CP_Radial_D7.5mm_P2.50mm	CP, Radial s
CP_Radial_D8.0mm_P2.50mm	CP, Radial s
CP_Radial_D8.0mm_P3.50mm	CP, Radial s



Radial_D8.0mm_P3.50

CP_Radial_D8.0mm_P3.50mm

CP, Radial series, Radial, pin pitch=3.50mm, diameter=8mm, height=12mm, Electrolytic Capacitor

Palabras clave CP Radial series Radial pin pitch 3.50mm diameter 8mm height 12mm Electrolytic Capacitor

Documentación

W V (SV) μF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)
100	5 × 11	6.3 × 11	6.3 × 11	8 × 11	8 × 11

ØD (+0.5 Max.)	5	6.3	8	10	13	16	18	22	25
F (±0.5)	2	2.5	3.5	5	5	7.5	7.5	10	12
Ød (±0.02)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8

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C2:

Selector de huellas (14469 elementos cargados)

Filtro

Apply footprint filters (CP_*)
 Filter by pin count (2)

Elemento	Descripción ^
CP_Axial_L93.0mm_D32...P100.00mm_Horizontal	CP, Axial se
CP_Axial_L93.0mm_D35...P100.00mm_Horizontal	CP, Axial se
CP_Radial_D4.0mm_P1.50mm	CP, Radial s
CP_Radial_D4.0mm_P2.00mm	CP, Radial s
CP_Radial_D5.0mm_P2.00mm	CP, Radial s
CP_Radial_D5.0mm_P2.50mm	CP, Radial s
CP_Radial_D6.3mm_P2.50mm	CP, Radial s



CP_Radial_D6.3mm_P2.50mm
CP, Radial series, Radial, pin pitch=2.50mm, diameter=6.3mm, height=7mm, Electrolytic Capacitor

Palabras clave CP Radial series Radial pin pitch 2.50mm diameter 6.3mm height 7mm Electrolytic Capacitor

Documentación

W V (SV) μF	10 (13)
100	5 × 11
220	
330	6.3 × 11

ØD (+0.5 Max.)	5	6.3	8	10	13	16	18	22	25
F (±0.5)	2	2.5	3.5	5	5	7.5	7.5	10	12
Ød (±0.02)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8

Inductor:

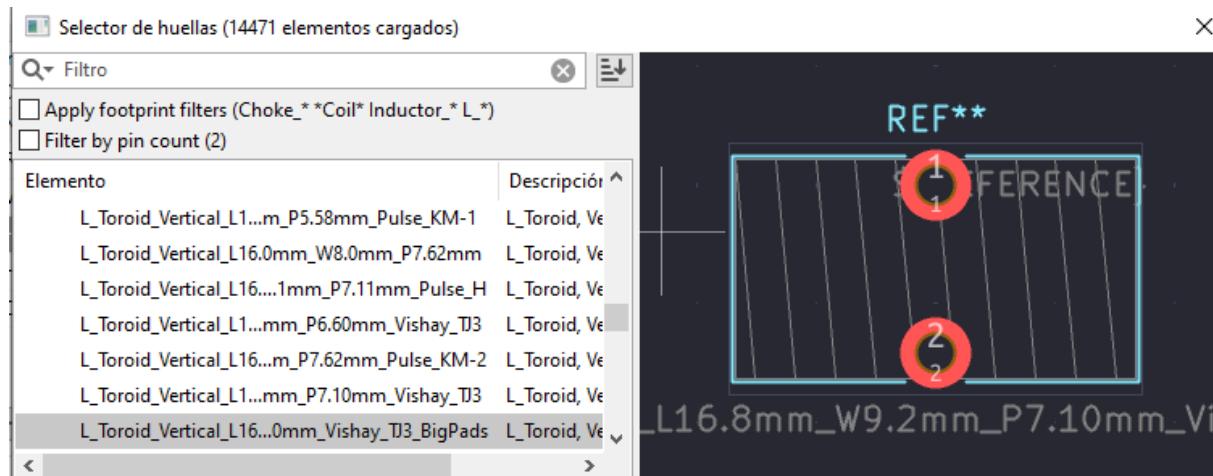
[Datasheet inductor](#)

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STANDARD ELECTRICAL SPECIFICATIONS in inches [millimeters]														
PART NUMBER	IND. (μH)	TOL. (%)	DCR NOM. (Ω)	RATED DC CURRENT (A)	IND. NOM. AT 0 DCA (μH)	INDUCTANCE SHIFT WITH DC CURRENT ⁽¹⁾						LEAD DIAMETER "A"		
						10 % DRO P (A)	IND. MIN. (μH)	20 % DRO P (A)	IND. MIN. (μH)	30 % DROP (A)	IND. MIN. (μH)			
TJ31UEB331L	330.0	± 15	0.342	1.2	330.00	0.33	252.45	0.53	224.40	0.76	196.35	0.99	168.30	0.014 [0.356]
MODEL	DIAMETER (D) (max.)	HEIGHT (H) (max.)	NOM. LEAD SPACING (Ls)	NOM. LEAD DIAMETER (Ld)	see TJ3 data	MODEL	DIAMETER (D) (max.)	HEIGHT (H) (max.)	NOM. LEAD SPACING (Ls)	NOM. LEAD DIAMETER (Ld)	see TJ3 data			
TJ3	0.65 [16.5]	0.30 [7.6]	0.26 ± 0.04 [6.60 ± 1.02]			TJ3	0.66 [16.8]	0.32 [8.1]	0.58 ± 0.08 [14.7 ± 2.03]					

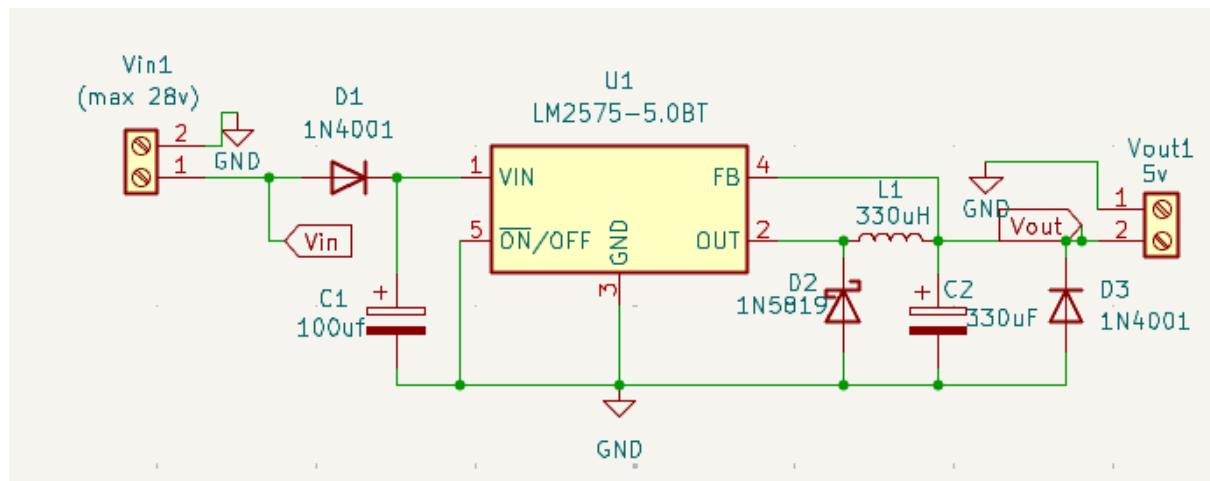


L_Toroid_Vertical_L16.8mm_W9.2mm_P7.10mm_Vishay_TJ3_BigPads
L_Toroid, Vertical series, Radial, pin pitch=7.10mm, length*width=16.8*9.2mm^2, Vishay, TJ3, BigPads,
<http://www.vishay.com/docs/34079/tj.pdf>

Palabras clave L_Toroid Vertical series Radial pin pitch 7.10mm length 16.8mm width 9.2mm Vishay TJ3 BigPads

Documentación <http://www.vishay.com/docs/34079/tj.pdf>

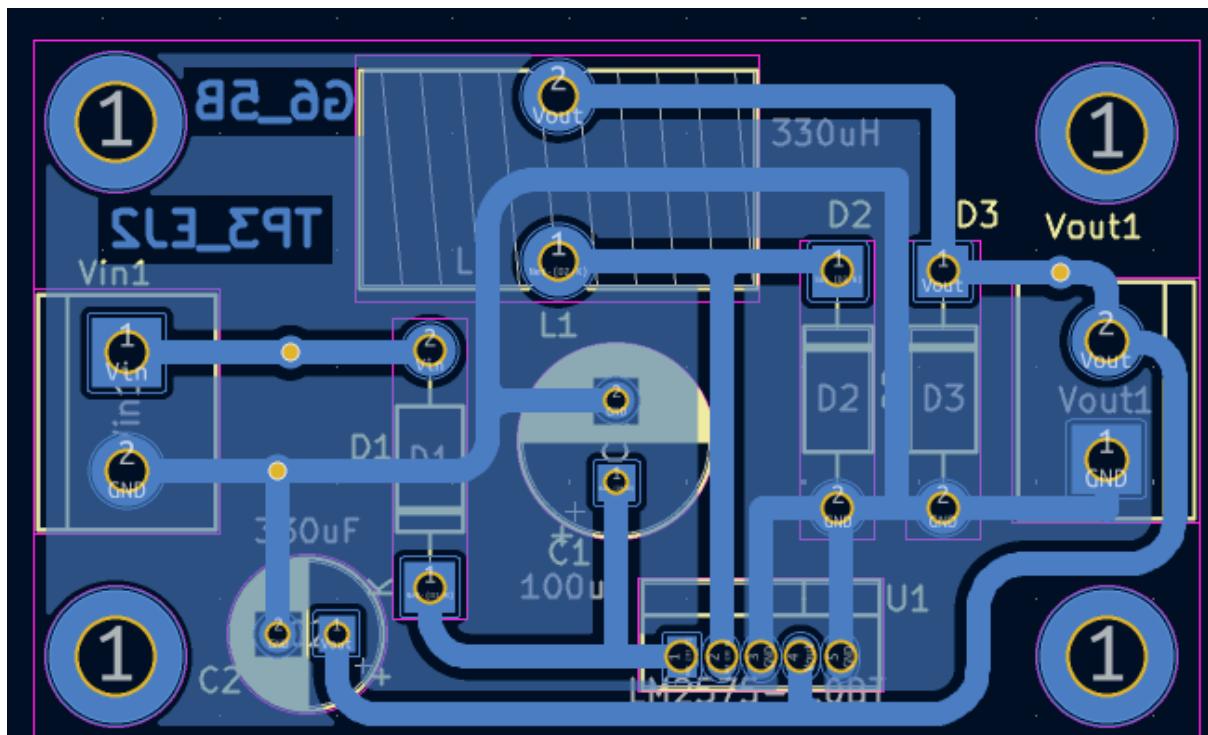
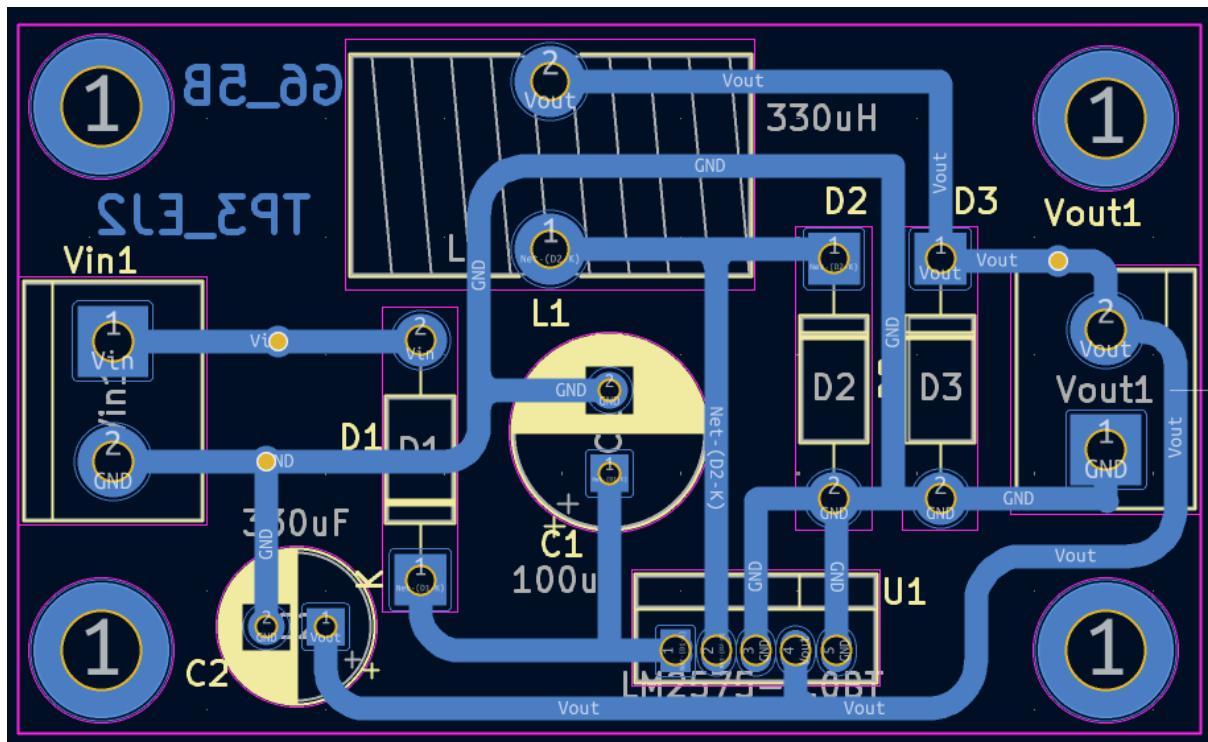
Esquemático y diseño placa:



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Ejercicio 2:

La salida debe ser 5v para esto se debe calcular las resistencias. Por si se desea cambiar en un futuro se coloca un preset.

Datasheet LM317

Fórmula para calcular R1:

$$V_{out} = 5V ; R_2 = 240 \Omega$$

$$V_{out} = 1.25 * [1 + (R_2 / R_1)]$$

$$5V = 1.25 * [1 + (240 \Omega / R_1)]$$

$$5V / 1.25 = [1 + (240 \Omega / R_1)]$$

$$4 = 1 + (240 / R_1)$$

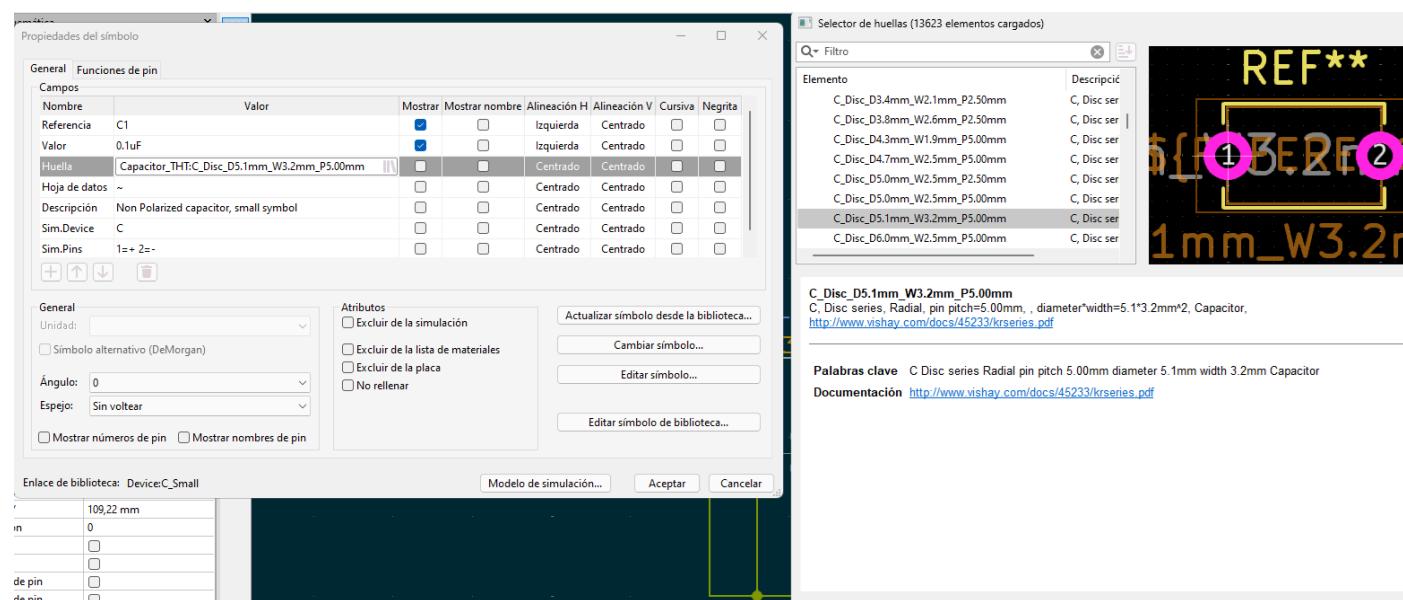
$$3 = 240 / R_1$$

$$1/80 = 1/R_1$$

$$(1/80)^{-1} = (1/R_1)^{-1}$$

$$R_1 = 80 \Omega$$

C1:



Datasheet cerámico

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Aquí se puede visualizar una imagen de cómo seleccionamos el footprint en función de el valor de faradios y el voltaje (0.1uF 50v)

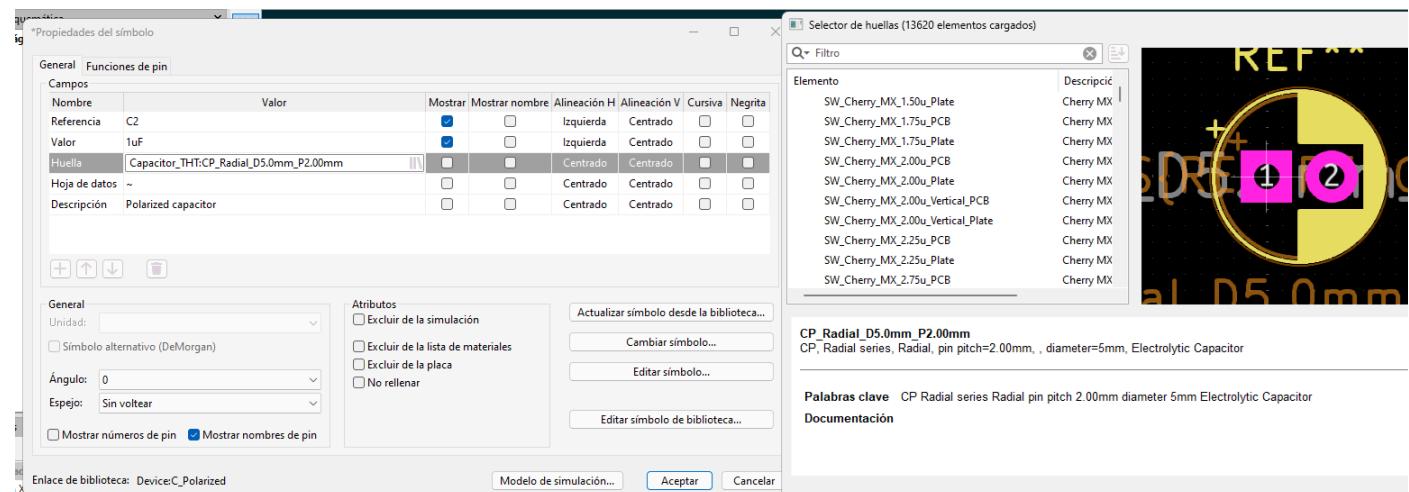
CAP. (pF)	50 V _{DC}	100 V _{DC}	200 V _{DC}
100 000	K104#15X7RF5###R	K104#15X7RH5###R	K104#20X7RK5###R

Size code

K104#15X7RF5###R

SIZE CODE	W _b MAX.	H _{MAX.}	T _{MAX.}	Lead Diameter	MAXIMUM SEATING HEIGHT (SH)			
					L2	H5	K2	K5
15	3.0 - 3.8	2.0 - 3.8	1.6 - 2.6	0.50 ± 0.05	1.6	2.6	3.5	3.5

C2:



Datasheet electrolítico

Aquí se puede visualizar una imagen de cómo seleccionamos el footprint en función de el valor de faradios y el voltaje (1uF 50v)

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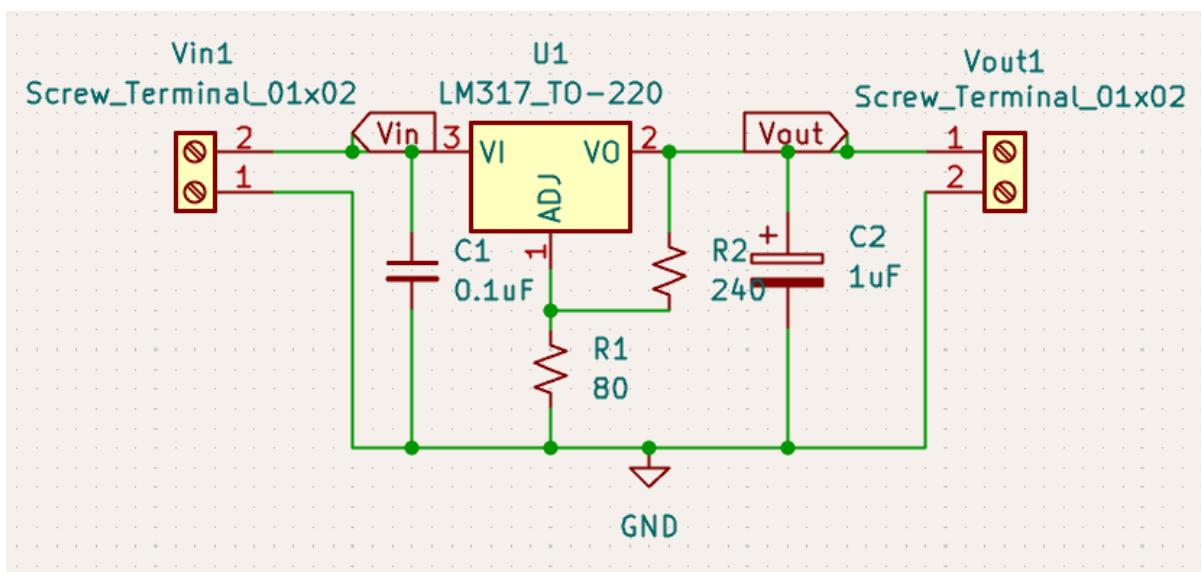
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$\varnothing D$ (+0.5 Max.)	5	6.3	8	10	13	16	18	22	25
F (± 0.5)	2	2.5	3.5	5	5	7.5	7.5	10	12
$\varnothing d$ (± 0.02)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8

Case Size Table

W V (SV) μF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)
0.1	-	-	-	→		-	
0.22	-	-	-	→		-	
0.33	-	-	-	→		-	
0.47	-	-	-	→		-	
1	-	-	-	→	5 × 11	-	



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